

SIGN GUIDELINES

**for Planning, Design, Fabrication, Procurement,
Installation, and Maintenance of Signs
for Outdoor Public Use Areas**



U.S. Department of the Interior
Bureau of Reclamation

March 2002

MISSION STATEMENTS

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to tribes.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

PREFACE

Effective communication with the public requires the clear, concise delivery of an understandable message through a certain medium. One of the best ways to convey information to the public is through the medium of signs. A comprehensive sign program should foster safety, facilitate management of an area, provide a learning opportunity for visitors, and offer a positive image and identity for all entities involved in the management of the area (i.e., Bureau of Reclamation, water districts, State parks, etc).

There has been a lack of conformity or continuity in signing of projects administered by Reclamation. Establishing uniform sign guidelines will aid in maintaining a positive Reclamation identity. The intent of this document is to provide needed direction that will facilitate uniform application of the signing guidelines on a Reclamation-wide basis. The guidelines contained herein are discretionary and may be used by Reclamation and others. However, if signs are to be installed on Reclamation lands, they must comply with certain accessibility laws and regulations. In addition, the *Manual on Uniform Traffic Control Devices* must be followed when placing these types of signs on Reclamation lands.

ACRONYMS/ABBREVIATIONS

ADAAG	Americans with Disabilities Act Accessibility Guidelines
Guidelines	Sign Guidelines
HDO	High Density Overlay
Interior	United States Department of the Interior
MDF	Medium Density Fiberboard
MDO	Medium Density Overlay
mph	miles per hour
MUTCD	<i>Manual on Uniform Traffic Control Devices</i>
NPS	National Park Service
ORV	off-road vehicle
PMS	Pantone Matching System
Reclamation	Bureau of Reclamation
ROS	Recreation Opportunity Spectrum
USFS	United States Forest Service

TABLE OF CONTENTS

	<i>Page</i>
Chapter I - Introduction	1
A. Purpose of Guidelines	1
B. Signing Guideline Principles	2
C. Sign Administration	3
1. Purpose	3
2. Scope	3
3. Responsibility	3
D. Sign Planning	3
1. Sign Plan	3
2. Sign Plan Formulation	4
3. Sign Plan Format	5
E. Sign Funding, Review, and Maintenance	5
1. Funding	5
2. Sign Review	6
3. Sign Maintenance	6
F. Sign Approval	6
G. Procurement Process	6
H. Data Base	6
Chapter II - Scope	7
Chapter III - Sign Classification	9
A. Identification Signs	9
1. Administrative Signs	9
2. Feature Signs	9
3. Area Signs	9
B. Information Signs	10
1. Bulletin Board Sign Medium	10
2. Instructional Signs	10
3. Interpretive Signs	10
4. Accessibility Signs	11
C. Directional Signs	11
D. Regulatory/Warning/Security	11
1. Vehicular Signs	11
2. Pedestrian Signs	12
E. Miscellaneous Signs	13
1. Temporary Signs	13
2. Concessionaire Signs	13
3. Boating Signs	14
4. Snowmobile Signs	14
5. Special Event Signs	15

TABLE OF CONTENTS - CONTINUED

	<i>Page</i>
6. Off-Road Vehicle (ORV) Signs	15
7. Hiking and/or Horse Trails	15
8. Waterway Markers	16
Chapter IV - Interpretive Signs	19
A. Introduction	19
B. Definitions and Concepts	19
C. Interpretive Signs in Relation to Other Media	20
1. Advantages	20
2. Disadvantages	20
D. Planning	21
1. Need	21
2. Objectives	21
3. Example	21
4. Visitor Profile and Marketing Research	22
5. Visitor Use Estimates	23
6. Themes	23
7. Design	23
8. Text	23
9. Examples	24
10. Graphics	24
11. Organization Identification	25
12. Sign Layout	25
E. Construction Materials	25
1. Anodized Aluminum	25
2. Gator Foam	25
3. High Impact Styrene	26
4. Embedded Fiberglass	26
5. Masonite Silk Screen	26
6. Photometal	26
7. Plexiglas	26
8. Polycarbonate	26
9. Polyethylene	26
10. Porcelain Enamel	26
11. Rigid Vinyl	27
12. Screened Sign Board	27
F. Location and Placement	27
1. Consider the following when selecting sign sites	27
2. Probable locations may be	27
3. Consider the following when determining proper sign placement	28

TABLE OF CONTENTS - CONTINUED

	<i>Page</i>
G. Special Considerations	28
1. Visitors with Disabilities	29
2. Tips	29
3. Bilingual Signing	30
H. Evaluating/Monitoring Effectiveness	30
1. Intrigue	30
2. Imagination	30
3. Involvement	30
4. Information	30
5. Influence	30
6. Accessibility	30
Chapter V - General Design Guidelines	31
A. Purpose	31
B. Principles	31
C. Sign Objectives	31
D. Sign Design	32
E. Standard, General Purpose Reclamation Signs	32
1. Traffic Control Sign Shapes	32
2. Colors	33
F. Agency Name	35
G. Vendor ID	35
H. Reflectorization	35
I. Message Formulation	35
1. When composing a message, consider the following Guidelines	36
2. Individual or Group Sign Development	36
J. Message Determination	39
1. First Step	40
2. Second Step	40
3. Third Step	40
4. First Partial Result	40
5. Fourth Step	40
6. Fifth Step	40
7. End Result	40
K. Sign Size Determination	40
L. Symbols/Seals/Emblems	41
1. Seals/Emblems	43
2. Agency Identification	44
M. Letter Styles	44
1. Typeface	44
2. Upper and Lowercase	44
N. Signposts and Bases	45
1. Placement and Installation	46

TABLE OF CONTENTS - CONTINUED

	<i>Page</i>
O. Determination of Letter Size	48
1. Roads	48
2. Pedestrian and Trail Signs	49
P. Rules for Capitalization	49
Q. Spacing Guide	50
1. Arrows	50
2. Minimum Vertical Spacing	51
3. Minimum Horizontal Spacing	53
R. Sign Materials	55
1. High-Density Overlay (HDO) Plywood	56
2. Medium-Density Overlay (MDO) Plywood	56
3. Medium-Density Fiberboard (MDF)	56
4. Plastics	56
5. Carsonite®	56
6. Aluminum	56
7. Tyvek	57
8. Cardboard	57
9. Porcelain Enamel on Steel	57
10. Fiberglass Embedment	57
11. Metal	57
12. Redwood	57
13. High-Density Foam Boards	57
S. Manufactured Signs	57
Chapter VI - Specific Design Guidelines	59
A. Design Type A ₁	59
1. Shape	59
2. Sign Board Size	59
3. Sign Board Material	59
4. Sign Board Fabrication	59
5. Sign Face	59
6. Sign Base	59
7. Method of Anchoring Sign	59
8. Lettering	59
B. Design Type A ₂	62
C. Design Type A ₃	65
D. Design Type B ₁	67
1. Shape	67
2. Sign Board Size	67
3. Sign Board Material	67
4. Sign Board Fabrication	67

TABLE OF CONTENTS - CONTINUED

	<i>Page</i>
5. Sign Face	67
6. Sign Supports	67
7. Method of Anchoring Sign	67
8. Lettering	67
E. Design Type B ₂	70
F. Design Type C	72
1. Shape	72
2. Sign Board Size	72
3. Sign Board Material	72
4. Sign Board Fabrication	72
5. Sign Face	72
6. Sign Supports	72
7. Method of Anchoring Sign	72
8. Lettering	72
G. Design Type D	74
1. Shape	74
2. Sign Board Size	74
3. Sign Board Material	74
4. Sign Board Fabrication	74
5. Sign Face	74
6. Sign Supports	74
7. Method of Anchoring Sign	74
8. Lettering	74
H. Design Type E	76
1. Shape	76
2. Sign Board Size	76
3. Sign Board Material	76
4. Sign Board Fabrication	76
5. Sign Face	76
6. Sign Supports	76
7. Method of Anchoring Sign	76
8. Lettering	76
I. Design Type F	78
1. Shape	78
2. Sign Board Size	78
3. Sign Board Material	78
4. Sign Board Fabrication	78
5. Sign Face	78
6. Sign Supports	78
7. Method of Anchoring Sign	78
8. Lettering	78
J. Design Type G	80

Chapter VII - Procurement	87
--	-----------

TABLE OF CONTENTS - CONTINUED

Page

Chapter VIII - Sign Funding and Inventory	89
A. General	89
B. Funding	89
C. Sign Inventory and Review	89
1. Adequacy	89
2. Wording	89
3. Design	89
D. Inventory	90
1. Identification Number	90
2. Location	90
3. Description	90
4. Substrate	90
5. Size	90
6. Installation Date	90
7. Cost	90
8. Last Maintenance Date	90
9. Cost of Maintenance	90
10. Current Condition	90
11. Date Condition Determined	90
12. Projected Next Maintenance Date	90
E. Evaluation	90
F. Action Plan	91
G. Planning Period	91
H. Documentation	91
Chapter IX - Sign Maintenance	93
A. Maintenance	93
1. Damage	93
2. Visibility	93
3. Legibility and Appearance	93
4. Maintenance Objective	93
5. Condition Survey	93
6. Maintenance Performance	95
7. Volunteers	98
References	99

TABLE OF CONTENTS - CONTINUED

TABLES

<i>Table</i>		<i>Page</i>
1	Major and Minor Identification Signs	10
2	Design Types	17
3	Pantone, CMYK, and Old Pratt and Lambert Comparison Chart	34

APPENDICES

Appendix 1 – Accessibility Data Management Checklists
Appendix 2 – Interpretive Services
Appendix 3 – Interpretive Project Planning Guide
Appendix 4 – Table of Letter Widths and Spacing Guide
Appendix 5 – International Symbols
Appendix 6 – Examples of Sign Inventory Worksheets

Chapter I

INTRODUCTION

The Bureau of Reclamation (Reclamation) is responsible for the stewardship of lands under its jurisdiction and should therefore adhere to uniform standards for signing public recreation use areas under its jurisdiction and management. In addition, Reclamation should provide adequate oversight of signs for public use areas managed by other entities, whether private or public. Signs are intended to guide, inform, and protect visitors to Reclamation projects.

When used, the sign guidelines (Guidelines) will bring an end to diverse signing practices and assist Reclamation in effectively managing its land and recreation programs. Where appropriate, these Guidelines incorporate information/material from the *Upper Colorado Regional Sign Guide*, *Mid-Pacific Recreation Sign Handbook*, *Accessibility Guidelines for Recreation Facilities and Outdoor Developed Areas*, *U.S. Army Corp of Engineers Sign Standards Manual*, Draft Bureau of Land Management Sign Handbook, and other appropriate sign design documents.

A. Purpose of Guidelines: The purpose of these Guidelines is to set forth guidance for planning, developing, and managing signs for outdoor public use areas at Reclamation projects.

These Guidelines will:

- Provide for the establishment of a sign program planning process.
- Describe the different types of signs and the locations where they are used.
- Provide general design standards.
- Provide specific design standards that apply to certain types of signs, including material and specification requirements.
- Identify procurement procedures.
- Provide inventory and maintenance guidance.
- Provide needed reference material.

These Guidelines provide the necessary information to plan, design, procure, install, and maintain signs at Reclamation projects. Except for the *Manual on Uniform Traffic Control Devices* (MUTCD) standards and accessibility guidelines detailed in this document, the guidance provided is discretionary. However, compliance with these Guidelines will result in a consistent, effective, and economic signing program that meets Reclamation's

Sign Guidelines

objectives and conveys to the public a favorable image of Reclamation. The sign principles used in formulating these Guidelines should be followed to successfully administer a comprehensive sign program.

B. Signing Guideline Principles: The following principles were used in formulating the Guidelines and should be used in administering a sign program:

1. Signs should deliver understandable messages to visitors.
2. The established Reclamation emblem shall be used, where appropriate.
3. Signs should convey either Reclamation's or a managing partner's primary mission, general information, or project data to the public.
4. Interpretive signs should educate and inform the public about the variety of natural and cultural resources managed by Reclamation or in cooperation with other entities.
5. Signs shall comply with accessibility standards (Americans with Disabilities Act Accessibility Guidelines, [ADAAG] 4.30) and, where appropriate, accommodate individuals with bilingual needs.
6. Accessible interpretive signs should follow the Smithsonian Guidelines for Accessible Exhibition Design.
7. Signs provided by a managing partner may follow their own guidelines, if such guidelines exist, or these Guidelines at the option of the managing partner.
8. Guidelines should use international symbols and established signing industry standards for design, fabrication, installation, and maintenance.
9. Guidelines should complement Reclamation's Crime Witness Protection Program and should assist in informing the public of prohibitions for entry into Reclamation facilities and areas.
10. Guidelines must comply with pertinent Federal, State, and local laws in administering signs at outdoor public use areas, as appropriate.
11. Consistent application of sign guidelines will help make areas safer for visitors at Reclamation projects, while reducing liabilities.

C. Sign Administration:

- 1. Purpose.**—The purpose of signs is to:
 - a. Help protect the health and safety of visitors to Reclamation lands and facilities.
 - b. Provide direction and guidance for the use of project lands and facilities.
 - c. Inform and educate the public about the natural and cultural resources of the project.
- 2. Scope.**—When used, these Guidelines should apply only to signs located on lands and at recreation facilities or structures located on Reclamation lands that are normally open for public recreation use on a regular basis (e.g., campgrounds, day use areas, trails, and boat launch areas). Signage at Reclamation facilities such as canals, powerplants, dams, construction sites, and office buildings is not covered under these guidelines. Where facilities are operated by other entities, other guide-lines may apply pursuant to prior arrangements and language in the management agreement. These Guidelines should be complied with at the time of renovation or replacement. Sign standards of managing partners may be used, if appropriate.
- 3. Responsibility.**—Responsibility for the administration of signs resides with the area or field office having administration over Reclamation’s real property for the areas under their jurisdiction.
 - a. Each area or field office should designate an office sign coordinator, which can be a collateral duty assignment. This individual should have the necessary skills and abilities to coordinate all the signing needs with the public affairs officer, accessibility coordinator, security officer, occupational health and safety officer, design engineer, landscape architect, and other office personnel, as appropriate. The sign coordinator may also be one of the above-mentioned individuals.
 - b. Each regional office should designate a regional sign coordinator to provide technical support and assistance to the area or field offices. This should also be a collateral duty assignment.
 - c. So that these Guidelines are interpreted consistently, Reclamation’s Denver Office of Policy and Technical Service Center can provide guidance upon request of the regional and field offices.

D. Sign Planning:

- 1. Sign Plan.**—A sign plan for all new and existing recreation use areas should be completed by Reclamation and/or in cooperation with its managing partner(s). Reclamation’s Accessibility Data Management System provides an excellent checklist that could be used as a planning tool to ensure that signage on Reclamation lands is in

Sign Guidelines

compliance with accessibility laws and regulations (see appendix 1). If sign plans and individual signs are developed, they should be considered as official drawings and subject to internal review and approval. During the preparation of a sign plan, the following questions should be addressed:

- a. Does the sign meet the public's or Reclamation's need, or would some other medium (e.g., brochure, factsheet, or map) be more effective?
- b. Does the sign convey a positive message?
- c. What type of message is needed (e.g., identification, information, direction, interpretation, or regulatory/warning message)?
- d. What should the message be, and is it brief enough to adapt to a sign?
- e. Where should the sign be located for optimal effect?
- f. Is the message needed for individuals:
 - (1) Traveling in automobiles or boats?
 - (2) Traveling on snowmobiles?
 - (3) Hiking, bicycling, horseback riding, or watching wildlife?
 - (4) With a disability?
- g. Have the funding sources for fabrication, installation, and future maintenance been identified?
- h. How many signs of each type should be purchased, taking into consideration replacement needs?
- i. Has proper coordination been accomplished with managing partners, including coordination of name recognition and symbol/seal/emblem placement?

2. Sign Plan Formulation.—Elements to consider in formulating a sign plan include:

- a. An overall area design theme and individual recreation area logo that considers the environment of the area, including dominant landscape, colors, forms and textures, cultural aspects, existing or planned architectural elements, and the diversity of the area visitors. In addition to an area logo, the sign base and mounting technique should accommodate the theme.
- b. The selection of sign substrate, color for background, message letter style, methods of fabrication, post style selection, and mounting and installation specifications to complete the chosen theme.

3. Sign Plan Format.—The sign plan should use the following format and include the indicated information:

- a. **Justification:** Describes why signs are needed.
- b. **Sign Locations:** Identifies, on a map, the area and location of proposed signs.
- c. **General Signing Concepts:** Discusses the “design theme” proposed for the area.
- d. **Sign Types:** Describes each type of sign needed.
- e. **Sign Design Fabrication:** Specifies how signs are to be designed, including color, substrate, letter size and style, construction details, and mounting base fabrication.
- f. **Sign Installation:** Specifies exactly how signs are to be installed, including base setting and installation hardware.
- g. **Sign Program Administration:** Identifies who is responsible for implementing these Guidelines.
- h. **Sign Catalog:** Establishes a numbering system for each sign on a location map (except for standard traffic signs) to facilitate easier replacement of signs.
- i. **Sign Order Forms:** Includes appropriate design and specification information to facilitate the fabrication of needed signs.

E. Sign Funding, Review, and Maintenance: Each operating office should prepare a sign inventory, conduct periodic reviews, prepare maintenance schedules, and prepare annual work plans requesting funds to repair or replace damaged signs or install new signs. It may not be the responsibility of Reclamation to fund the administration of signs; however, in most instances, it is Reclamation’s stewardship responsibility to ensure that proper signs are installed and maintained. The office sign coordinator should be responsible for coordinating the funding, review, and maintenance of all signs.

1. Funding.—Reclamation will have different levels of funding obligations for the planning, design, fabrication, installation, and maintenance of signs at its projects. Funding requirements and level of involvement depend on the management entity and arrangements negotiated between Reclamation and its managing partner(s).

- a. **Reclamation-Managed Area:** All funding needs for conducting inventories and reviews and preparing maintenance schedules, as well as for the cost of planning, design, fabrication, installation, and maintenance, are the responsibility of the designated area or field office.

Sign Guidelines

- b. ***Areas Managed by Other Federal or Non-Federal Entities:*** All funding needs for administering signs for outdoor public use areas (e.g., lands, reservoirs, and facilities) on Reclamation lands that are managed by another entity are the responsibility of the managing partner, unless otherwise agreed to in a management agreement.
 - c. ***Jointly Managed Area:*** All funding needs for public recreation use areas managed by Reclamation, in cooperation with another entity, should be determined through negotiation and a subsequent management agreement. Joint occupancy may be with either a Federal or non-Federal entity.
 - 2. **Sign Review.**—A periodic review should be performed by Reclamation’s area or field office, or in cooperation with its managing partner, to address adequacy, wording, and design standards.
 - 3. **Sign Maintenance.**—A maintenance schedule should be prepared, reviewed, and updated annually to address damage, visibility, legibility, and appearance.
- F. **Sign Approval:** A sign plan should be approved by the area office manager or a designated official prior to fabrication and installation.
- G. **Procurement Process:** The procurement of fabricated signs and standardized signs, such as warning, traffic, snowmobile, boating, and General Service Administration signs, may be obtained by normal field or area office procedures.
- H. **Data Base:** Reclamation’s regional offices, in cooperation with its area and field offices, are encouraged to develop a sign data base, which would facilitate consistent application of these Guidelines.

Chapter II

SCOPE

The primary scope of these Guidelines is for outdoor public visitor signing on both land and water areas. These Guidelines do not include guidance on interior signage for office buildings and dams, and other Reclamation employee workplaces. If signs relate directly to the public's use and enjoyment of Reclamation facilities, lands, and waters, these Guidelines should be used in the planning, fabrication, installation, maintenance, and replacement of such signs. Signing situations not covered in these Guidelines should follow the specifications set forth in the MUTCD, published by the Federal Highway Administration, and other pertinent laws, rules, and regulations. These Guidelines are intended to supplement, and not supercede or conflict with, existing guidance provided by Reclamation's Public Health and Safety Office, Public Affairs Office, and Security Office. These Guidelines shall comply with all accessibility laws, rules, regulations, and guidelines.

These Guidelines apply to the signage of lands and facilities under the jurisdiction and management of Reclamation and those managed by other entities. Three distinct management situations occur with regard to such facilities and lands, each requiring different guidance and direction. These include: (1) management by Reclamation; (2) management by a non-Federal entity, such as a water users' organization, city, county, State, or another Federal entity, such as the United States Forest Service (USFS) or the National Park Service (NPS); and (3) joint occupancy or management of a facility or lands with either a non-Federal or another Federal entity or entities. These are described in greater detail below:

- Management by Reclamation means that Reclamation has sole jurisdiction over the lands and, therefore, complete management responsibility for all recreation-related facilities, programs, and services. Signing for Reclamation-managed facilities and lands should follow the Guidelines described herein. In this management situation, Reclamation has sole responsibility for the funding, planning, design, fabrication, maintenance, and replacement of all signs.
- Lands managed by a non-Federal entity will usually be signed according to that entity's sign standards, if they exist. However, a written reference to Reclamation should always be part of the main entry sign to an area or facility (see Design Type A₂, chapter VI). Such signs shall also display Reclamation's emblem alongside the managing partners. This should not be an add-on sign board below or to the side of the entry sign, but will be part of the main body of the sign. A description of Reclamation's ownership and involvement should also be displayed at other convenient places, such as visitor overlooks, visitor contact stations, visitor centers, orientation areas, interpretative areas/facilities, and administrative areas.

Lands and facilities managed by other Federal entities are either: (1) those areas leased for management purposes, or (2) those areas where the lands and facilities have been jurisdictionally transferred by legislation to another Federal agency. Two examples that fall under the latter description would be Reclamation lands and

Sign Guidelines

associated recreation facilities that have been transferred to the USFS under Public Law 89-72, as amended, or lands and facilities that are within National Recreation Areas that have been jurisdictionally transferred to the NPS or, in some instances, the USFS. The lands and facilities will be managed under USFS or NPS rules and regulations; however, Reclamation continues to manage the Federal water project that was originally authorized by Congress (see Design Type A₂, chapter VI).

When there is a temporary managing entity or where a change in management is pending, temporary sign boards may be appropriate.

In cases where the participating Federal or non-Federal entity has no established sign guidelines, that entity should be encouraged to adopt Reclamation's Guidelines. The funding, design, installation, maintenance, and replacement of such signs shall ultimately be the responsibility of the managing entity unless otherwise agreed to in a management agreement. Some managing partners already have quality sign standards. In these instances, existing standards may be used, when appropriate.

Sign needs within areas that have been reserved for Reclamation's administration and use (i.e., areas immediately adjacent to dams and along canals which are closed to public use) will be the responsibility of Reclamation. Reclamation should follow its own sign guidelines within these restricted areas.

- Joint management means those related lands and facilities that are jointly managed pursuant to existing laws and subsequent management agreements. Reclamation may or may not hold title to all lands and facilities described in the management agreement. Each entity's responsibilities concerning funding, planning, fabrication, placement, and operation and maintenance of signs for areas under joint management or occupancy will be resolved by negotiations with the entity or entities involved. If Reclamation has the dominant role, its Guidelines should be used. In situations where Reclamation has minor involvement in the funding, fabrication, and installation of such signs, it may be prudent to follow the lead entity's design guidelines. If the lead entity lacks adequate guidelines, Reclamation's Guidelines should apply.

Chapter III

SIGN CLASSIFICATION

The purpose of this section is to group and define all the types of signs used on Reclamation lands. These groups are represented in the following categories: identification signs; informational signs; directional signs; regulatory, warning, and security signs; and a miscellaneous group that includes temporary, boating, snowmobile, concessionaire, and special event signs.

A. Identification Signs: These signs help to orient the visitor and identify important areas and facilities. They are grouped into three subcategories:

- 1. Administrative Signs.**—These signs are used to identify office buildings, construction offices, laboratories, field stations, housing compounds, visitor centers, etc. When an administrative structure is in an urban setting, signing may require deviation from the instructions set forth in these Guidelines. When such needs occur, the respective office sign coordinator should be responsible for developing a sign plan for that structure.
- 2. Feature Signs.**—These signs are used to identify structures built or areas managed by Reclamation, such as dams, outlet works, canals, tunnels, and powerplants. These types of signs would also be located at or near reservoirs or wildlife management areas to identify such features.
- 3. Area Signs.**—These signs designate a land area, facility, or group of facilities not covered in the above subcategories. Area signs should be located along primary access routes serving each area. Typical areas that should be signed are reservoir recreation areas, entrances to recreation complexes, recreation components, associated campgrounds, and day-use areas.

Within each identification sign subcategory, a major and minor distinction is made, depending on the public exposure a facility or area will receive (see table 1). This distinction can assist personnel in prioritizing the fabrication, installation, maintenance, and replacement of such signs. The operating office, in conjunction with the regional office, must have the flexibility to apply evaluation criteria, in addition to the criteria listed in table 1, to determine the significance of an identification sign and to determine if it is to be considered an administrative, feature, or area sign.

Table 1.—Major and Minor Identification Signs

Subcategory	Major (Design Type A)	Minor (Design Type B and C)
Administrative signs	Project offices, construction offices, visitor centers, field division offices, etc.	Field stations, field laboratories, housing compounds, etc.
Feature signs	Dams, reservoirs, and wildlife areas with moderate to heavy public visitation. ¹	Small dams, reservoirs, and wildlife areas with little or no public visitation. ¹ Canals, tunnels, powerplants, treatment plants, pumping plants, etc.
Area signs	Associated recreation development: reservoir recreation area, recreation complex. Unassociated recreation development: campgrounds (greater than 10 units), day-use (greater than 50-vehicle capacity).	Associated recreation development: recreation component. Unassociated recreation development: campgrounds (10 units or less), day-use (50-vehicle or less capacity).

¹ The operating office, in cooperation with the regional sign coordinator and the public affairs officer, will evaluate public visitation and make major/minor determination.
See table 2 for types of signs used for each area.

B. Information Signs: These are signs located in key areas throughout the site that provide important information for the visitor. The message should be conveyed in a brief, clear manner and be located to provide information to the visitor as it is needed. Information signs consist of the following subcategories:

- 1. Bulletin Board Sign Medium.**—This sign should be large enough to post rules, regulations, and other information pertinent to a particular site, and it will allow space for the posting of messages by users. It is also important to provide the public with adequate direction to the nearest emergency medical facility.
- 2. Instructional Signs.**—These signs should provide instructions for the use or operation of specific facilities such as trailer dump stations, boat ramps, and fish cleaning stations. They should also be used, in association with other signs, facilities, or other media, to provide supplemental information as required (e.g., seasonal information, office hours, restrooms, showers, and campground unit number posts).
- 3. Interpretive Signs.**—These are signs or exhibits that are placed in specific locations around the project to provide interpretation of the site. They may take on many forms including textual messages, plaques, markers, panels, and demonstrations.

4. **Accessibility Signs.**—These are signs that depict access to persons with disabilities. The signs could designate certain sites for persons with disabilities or notify individuals or groups that certain programs and facilities are accessible to persons with disabilities (e.g., restrooms, trails, campgrounds).

The design of these signs should reflect characteristics of the site or object they are interpreting, while maintaining harmony with the overall design of the project area.

Because signs need to relate directly to the interpretive needs of a site, no specific guidelines have been established for their format. However, interpretive signs should be concise and should be an integral part of an overall area sign plan. Because of their unique characteristics and the fact that there are so many design variables, interpretive signs are discussed in greater detail in chapter IV, Interpretive Signs.

- C. **Directional Signs:** These are signs that show the location of specific project features or facilities. International symbols should be used, when possible, to provide the necessary information in a simple, concise manner. The international symbol for accessibility should be used, whenever possible, to direct visitors to accessible facilities and programs. Directional signs should be located to provide the visitor adequate time to make a decision.
- D. **Regulatory/Warning/Security:** These signs should be used when necessary for the protection of visitors and the environment. These types of signs are also needed to address the security needs of Reclamation facilities and facilities managed by other entities. The Crime Witness Protection Program types of signs are an integral part of this classification of signs. Signs should be concise and straightforward and should use international symbols wherever possible to facilitate understanding at a glance and to aid in maintaining design continuity throughout the project. They should be plainly displayed and legible from any approach to a facility or feature, whether the visitor is on foot, in a wheelchair, or in a vehicle. When appropriate, signs should not only be erected to control existing authorized uses but also to deter unauthorized entry and use, and to preclude accidental entry. The size and coloring of such signs, lettering, and the interval of posting must be appropriate for each situation. Regulatory/warning signs consist of the following subcategories:
 1. **Vehicular Signs.**—Vehicular signs will be of the standard metal highway type in conformance with all MUTCD standards to facilitate safety. Vehicular signs will be placed at entrances and exits to project areas and features, and along the travel routes within a project, to regulate motor vehicle traffic.

Signs designating a prohibited area, and the conditions of entry to a facility or area, should be plainly posted at all principal entrances and should be legible at a distance not less than 50 feet from the point of entry. Such signs should inform the entrant of

Sign Guidelines

the necessity of a search of the person, vehicle, packages, etc., or prohibitions against such items as cameras or backpacks or against entry for reasons other than official business, etc., as may be prescribed by the facility manager.

- 2. Pedestrian Signs.**—Pedestrian signs regulate foot traffic within the recreation and wildlife areas and adjacent to areas where the public is restricted. Care should be taken to ensure that the signs are placed in the best location to be seen by the public. Signs should be erected according to the degree of security desired. The message should be effectively conveyed to the visitor. The signs should not only set forth the designation of the prohibited area, but challenge visitors by warning intruders that an area is restricted and that trespassing is prohibited. Warning signs should be installed along the area's physical barriers, such as fences, and at each entry point, so they can be readily seen and understood by anyone approaching the perimeter. Signs should be posted on or outside the physical perimeter barriers and must be at intervals of no more than 100 feet. Signs should not be mounted on fences equipped with electronic security sensors because nuisance alarms could be caused by incidental movement of the signs. Examples of pedestrian Regulatory/Warning/Security signs are shown below. Color specifications of the seven signs are shown in Chapter VI - Specific Design Guidelines.



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION



NOTICE

You are on Federal lands.

Cultural resources in the vicinity of this notice are fragile and irreplaceable. The Archaeological Resources Protection Act of 1979, the Antiquities Act of 1906, and the Native American Graves Protection and Repatriation Act of 1990 protect them for the benefit of all Americans.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item or archaeological resource on the public lands of the United States is subject to arrest and penalty of law. (16USC433, 16USC470, 18USC641, 18USC1170, 18USC1361)

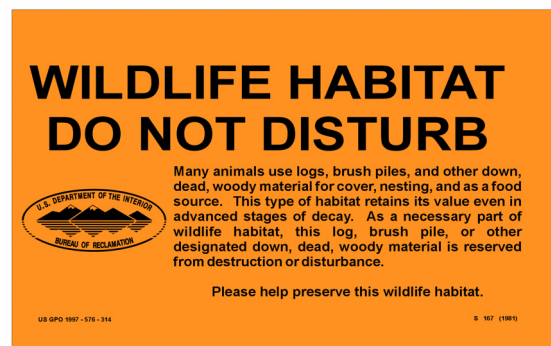
Penalties prescribed by law may be up to a \$250,000 fine, imprisonment for up to six years, or both. Forfeiture of vehicles and equipment and other civil penalties may also be imposed.

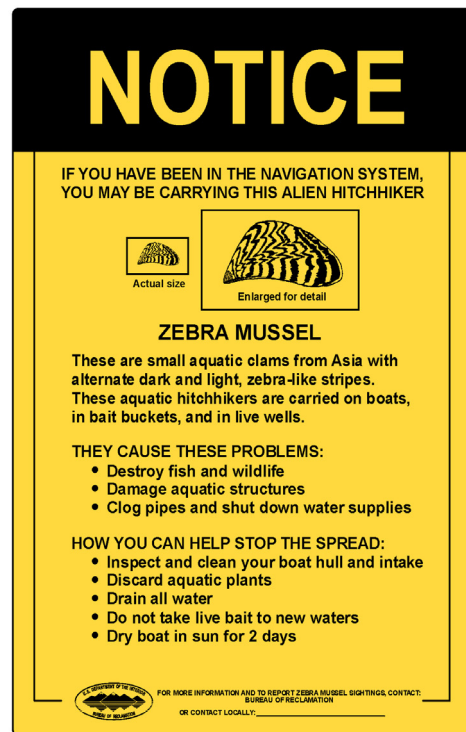
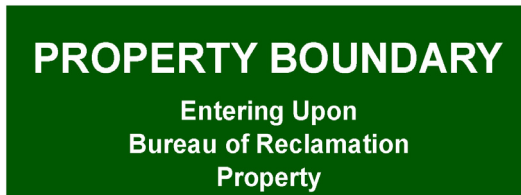
Permits to excavate sites or remove artifacts can be issued only to qualified persons for the purpose of furthering knowledge in the public interest.

ENJOY, DON'T DESTROY YOUR AMERICAN HERITAGE

For further information, contact the Bureau of Reclamation at:

S - 053 (Aug 1993)





E. Miscellaneous Signs:

1. **Temporary Signs.**—Temporary signs are necessary at construction sites and at other areas and/or sites. They can be divided into two groups. First, vehicular Regulatory/Warning/Security signs will follow MUTCD standards and have black letters on an orange background. Second, all other signs will follow the rules for directional signs as outlined in these Guidelines, except the lettering will be black on white background. Where practical, Reclamation's graphic identity and emblem may be included.
2. **Concessionaire Signs.**—As is practical, outdoor signs within a concessionaire's area will follow the same design format as signs throughout the reservoir area. These types of signs should not display the U.S. Department of the Interior's (Interior) seal or Reclamation's emblem. All concessionaire signs must be reviewed and approved by the responsible office sign coordinator.

Sign Guidelines

The sign coordinator has the flexibility to grant deviations from established guidelines when local conditions, such as topography and vegetation, dictate otherwise. Neon or flashing signs are not recommended outdoors. However, backlighting or indirect lighting is permissible. Signs that exceed the height of concession buildings should not be permitted under normal circumstances.

Permanent outdoor signs that advertise products by brand name, or by use of emblems or symbols in the colors or designs used by manufacturers, should be prohibited. The local office sign coordinator may allow temporary use of company banners and signage when such a company is sponsoring a special public event that has received the prior approval of Reclamation. Concessionaire's gasoline pumps may be painted in the recognizable standard colors normally used by the oil company who supplies the gasoline and may include the oil company's name or emblem, which shall not extend beyond the normal pump dimensions.

3. **Boating Signs.**—All signs must conform to the Uniform Waterways Marker System unless otherwise specified by State or county authorities who may have jurisdiction and/or responsibility, such as a State Marine Board. Signs used for the identification of land-based facilities for boaters should conform to the standards for area signs. Land-based directional signs for boaters will conform to the same standards as vehicular directional signs.
4. **Snowmobile Signs.**—Snowmobile users may be exposed to various hazard conditions. These hazards, coupled with the speed of snowmobilers, require effective route marking. The office sign plan should identify snowmobile trails as needing effective signing that emphasizes user safety and provides adequate warnings of hazards. Snowmobile signs must conform to the National Snowmobile Association Standards. Trails should be marked with black, 12-inch snowmobiling symbols on an orange background. If desired, signs may be affixed in such a manner as to be easily removed during the off-season. Typically, the following four types of signs are used in conjunction with snowmobile trails:
 - a. ***Snowmobile Trail Identification Symbol:*** This graphic symbol sign should be provided in two sizes. The larger of the two signs is intended for posting at the trail head. The smaller size is intended for use at major intersections and at the end of trails. The signs should be manufactured in 18- by 24-inch and 13- by 17-inch sizes, respectively. The signs should be black on orange and reflectorized.
 - b. ***Directional Markers and Blazers:*** The directional markers are used at intersections, sharp curves, across meadows and large lakes, and at other key locations. Blazers delineate the trail and furnish reassurance to the users. Blazers are usually located at intervals of 250 to 300 feet on a line of sight. In densely wooded areas, shorter intervals may be necessary.

- c. **Warning, Caution, and Regulatory Signs:** These signs retain the same shape and color as road signs and must be reflectorized. The minimum size is 18 by 24 inches. Larger sizes may be warranted when dealing with critical hazards, such as avalanches, thin ice on lakes, etc.
 - d. **Information Signs:** These contain and include trail rules and regulations, diagrammatic trail maps, and other pertinent information, as necessary.
5. **Special Event Signs.**—The temporary use of banners and signs designating a special, one-time public event on Reclamation lands should be allowed. No guidelines or specifications are contained herein.
6. **Off-Road Vehicle (ORV) Signs.**—These signs inform visitors of the status of Reclamation lands with respect to their use by visitors using ORVs. Reclamation lands are closed to ORVs unless the lands have been officially designated as open. If Reclamation lands are open to ORVs, signs should provide the visitor an appropriate level of information as they enter, use, and leave Reclamation-administered lands. Signs should provide positive explanations for specific use restrictions and, where appropriate, include “Tread Lightly” and “Leave No Trace” concepts in the signing program.

Use standard symbols, colors, sign shapes, and sign sizes that follow established highway signing principles and practices that are easily recognized and understood by visitors. Where feasible, signing should be consistent with that of the State in which the Reclamation lands are located. Uniform signing methods should be used within areas of land that are perceived and identified by the public as a single unit. In addition, specific strategies for the use of ORV signs should be consistent with State and Federal regulations when there is a possibility that certain roads or trails may be used by both ORVs and standard highway vehicles.

7. **Hiking and/or Horse Trails.**—There are two types of signs associated with hiking and/or horse trails. They are:
- a. **Trail Head Signs.** These types of signs should use graphic symbols to identify trails. The choice of symbol or symbol combinations depends on the intended trail use. A trail head sign may also have the trail name and not more than three destinations. When destinations are listed, the distance to the destinations should also be listed. These signs should be rectangular in shape and reflectorized with white letters on a brown background. Sign size should be 18 by 21 inches.
 - b. **Guide Signs.**
 - (1) **Destination Signs.** These signs are posted at intersections to show changes in direction and to provide reassurance to the trail users. The distance should be shown in miles and, if fractions are used, they should be to the nearest 1/4 or 1/2 mile. These signs should be in the shape of a truncated triangle and made with reflectorized sheeting.

Sign Guidelines

- (2) *Trail Blazers.* These signs are used at key locations to delineate the trail and to provide reassurance to the users.

Placement and erection of trail signs should be considered during the planning phase of development. Signs should be located:

- a. Far enough off a trail so they will not be damaged by users.
 - b. Away from obvious hazards.
 - c. So that they do not compete with the view of the surrounding landscape.
 - d. So that the height of the sign is in scale with the intended viewer. For foot traffic, the suggested mounting height is approximately 4 feet, measured from the lower edge of the sign. When the trail is intended to be accessible to people with disabilities, the mounting height should meet all accessibility standards and guidelines (ADAAG 4.30). The height of the sign should increase approximately 2 feet for horse trails.
 - e. With sign supports in scale to the size of the sign. Two posts should be used for signs of 37 inches in length or greater.
- 8. Waterway Markers.**—Signs prescribed by the United States Coast Guard and approved by the States are the standard waterway markers on large bodies of water requiring control of water traffic, water skiing, skindiving, and other similar uses. Coordination with State authorities is necessary for providing appropriate signing for these types of recreation use. When signing is necessary on small bodies of water entirely under Reclamation's jurisdiction, the National Coast Guard-approved standards must also be adhered to.

Determining signing needs is the responsibility of each operating office, but may be done in conjunction with the regional sign coordinator. Signing needs for project features, land areas, recreation facilities, field offices, laboratories, etc., should be evaluated by the operating office having jurisdiction and shall be coordinated with the office sign coordinator. However, final approval of public signing rests with the designated office sign coordinator.

Once the signing need has been classified, the design type can be determined by using table 2.

Table 2.—Design Types

Sign Classification		Design Types ¹		
		Management arrangement ³		
Identification signs		1	2	3
Administrative signs	Project offices, construction offices, visitor centers	A ₁		A ₃
	Field offices, field station, field laboratories, housing, etc.	B ₁		B ₂
Feature signs	Dams, reservoirs, and wildlife areas	A ₁	A ₁	A ₃
	Canals, tunnels, powerplants, etc.	B ₁	B ₁	B ₂
Area signs ³	Associated recreation development:			
	Reservoir recreation area	A ₁		
	Recreation complex	A ₁	A ₂	
	Recreation component	C	A ₂	
	Unassociated recreation development:			
	Campground, picnic area, fisherman access area, marina and boat ramp facilities, visitor overlooks	A ₁ /B ₁	² A ₂	
Information signs	Bulletin board signs	D		
	Instructional signs	E		
Directional signs		F		
Regulatory/warning/security signs		MUTCD or other standard signs and G ₁ , G ₂ , G ₃		
Miscellaneous signs		No standard design type		

¹ Design types are shown in Chapter VI - Specific Design Guidelines.² Refer to table 1 for major/minor differences. Major is Design Type A and minor is Design Types B and C.³ See Chapter II - Scope, for more detailed description of the following management arrangements:

1. Bureau of Reclamation management
2. Other agency management of Reclamation lands and facilities
3. Joint occupancy or management of an area or facility

Chapter IV

INTERPRETIVE SIGNS

A. Introduction: This chapter discusses interpretation in general and provides “how to” information about interpretive signs. It is not intended to be a comprehensive discussion of a very complex communication process. Rather, it provides some very basic guidance to noninterpreters faced with an interpretation project or task. This section may best serve to encourage a professionally trained resource specialist or a professionally trained public affairs specialist to seek the aid and counsel of a professionally trained interpretive specialist.

B. Definitions and Concepts:

1. Interpretation is a communication process designed to reveal meanings and relationships of our cultural and natural heritage to the public through firsthand involvement with facilities, objects, artifacts, landscapes, and sites. Interpretation does much more than just provide facts. Interpretation tells a story and brings meaning and interest to a subject for the enjoyment of the visitor.
2. Interpretive signs communicate specific messages to visitors. These messages can be written to change behavior, educate, or evoke an emotion in the reader. They are most commonly used for self-guided trails and for wayside exhibits at points of interest, such as viewing areas and resource management areas. They can be constructed of many different materials and are mounted so they are visible to all viewers.
3. Interpretive signs provide communication services to visitors. Interpretive signs support management objectives, tell a story, and reveal meanings of and relationships among built, manipulated, natural, cultural, and other natural resource features. The program’s main components are orientation, information, and interpretation. The program functions as a customer service tool, a management tool, and a public awareness tool.
4. To be “interpretive,” the communication process should be based on the principles articulated by Freeman Tilden (see appendix 2). Interpretation should:
 - a. Provoke the attention or curiosity of the audience.
 - b. Relate the message to the everyday life of the audience.
 - c. Reveal the essence of the subject through a unique viewpoint.
 - d. Address the whole. Show the logical significance of an object to a higher level concept or story line.

Sign Guidelines

- e. Strive for message utility. Use a sufficient but varied repetition of cues to create and accentuate a particular mood, theme, aura, or atmosphere.

5. Interpretive Signs:

- a. Use a combination of well-written text and professional graphics to convey a message.
- b. Increase visitor enjoyment through appreciation and understanding of features, concepts, themes, and stories of the natural, cultural, created, managed, and historic environments.
- c. Explain management of public land resources.
- d. Guide or modify visitor behavior to reduce visitor impacts to resources or facilities.

C. Interpretive Signs in Relation to Other Media:

1. Advantages.—

- a. More visitor contacts than other types of media.
- b. Relatively inexpensive in terms of cost per visitor contact.
- c. Consistent message to many people at one time and can be viewed at the visitors' convenience.
- d. In place at all times and available to visitors 24 hours a day.
- e. Long-term value, since visitors' photos tell the story long after the visit.

2. Disadvantages.—

- a. Impersonal - contacts by employees are much more effective.
- b. Communicate one-way and may become outdated.
- c. No tangible "take home" value except for the visitors' photographs of them.
- d. Draws attention to a fragile resource which, in turn, may be damaged or destroyed through inappropriate behavior of visitors.
- e. Vulnerable to damage by weathering, decay, wildlife, and vandalism.

D. Planning: Interpretive sign planning is a process that requires detailed interdisciplinary participation, including the use of interpretive specialists (see appendix 3).

1. Need.—Consider the following in determining the need for interpretive signs:

- a. Is there something visitors can see, smell, or hear at the area that needs explaining?
- b. Is there something interesting in the area that visitors will probably miss if not interpreted?
- c. Will visitors get more from their experience if appropriate interpretive signs are provided?
- d. Is interpretive signing appropriate, or will some other method work better?
- e. Are there impacts or damage being caused by visitor use or behavior which can be alleviated by an interpretive sign?
- f. Will enough visitors see the sign to make it cost effective?
- g. Is interpretive signing consistent with the Recreation Opportunity Spectrum (ROS) class of the proposed area, if ROS is being used?
- h. Will people with disabilities be accommodated (reference ADAAG 4.30)?

If the answers are “Yes,” plan for the minimum number of signs needed to convey the appropriate message(s) in a professional manner. Too many signs reduce effectiveness.

2. Objectives.—State the objectives of the sign in writing. They should support the objectives and goals listed in the interpretive plan for the site or project area. When developing interpretive signs, consider agency and project objectives, as well as visitor expectations. For example, visitors to a particular site may want to learn something about an historic event that occurred there, or the agency may want them to be aware that sites are being preserved and studied through an ongoing cultural resources management program. Without satisfying both parties’ needs, an interpretive sign will be only partially effective. Clear objectives help to evaluate the effectiveness of the sign. Three levels of objectives should be addressed:

- a. **Educational:** What should the visitor KNOW?
- b. **Behavioral:** What should the visitor DO?
- c. **Emotional:** What should the visitor FEEL?

3. Example.—An agency observes that visitors to a campground are causing damage to trees at the site. A visitor profile reveals that the campsite’s predominant users are

Sign Guidelines

families with young children and teenagers who camp two to three times a year. The families live in an urban area and don't have much sensitivity to, or understanding of, the environment.

- a. The agency defines its objectives as follows:
 - (1) **KNOW:** The visitor will be able to identify three behaviors that cause injury to a tree.
 - (2) **DO:** The visitor will stop injuring trees in the campgrounds.
 - (3) **FEEL:** The visitor will respect trees as living organisms.
 - b. The agency's staff decides an interpretative sign will be the most effective medium. They choose to place it near a tree that clearly shows signs of vandalism. They construct the sign message as follows:
 - (1) **Artwork:** First drawing - Anthropomorphized tree wincing as a person hammers a nail into it to hang a lantern. Tree has bandages and scars on it; several branches are broken. Tree is not robust, looks sickly. Second drawing - Healthy, happy tree, radiant with good health and vigor.
 - (2) **Test:** *"Ouch! Like you, trees can get sick or be hurt. When bark is injured through such thoughtless acts as hammering nails, breaking branches, and carving, it allows easier entry for harmful insects and diseases, which may eventually kill the tree. Look at the oak tree behind this sign. Does it look healthy? What signs of injury do you see?"*

"Please help campground trees stay healthy by not hammering nails, carving bark, or breaking branches. You'll help them stay around a lot longer to provide shade and scenery, improve air quality, give wildlife homes, and protect soil from erosion."
 - c. The agency's staff considers supplementing the sign with other interpretive activities (self-guided or ranger led) for children and parents. The activities touch on outdoor skills and ethics to further emphasize the message and to enhance the public's awareness of trees.
- 4. Visitor Profile and Marketing Research.**—Describe the characteristics of the visitors who will be reading the sign, what they like, what their expectations are, and determine what visitors need to be satisfied. In most cases, the visitors should be asked about these needs, rather than the staff making assumptions. Seek assistance of someone who specializes in "service marketing."

This research should drive the entire interpretive planning process. Knowing who the visitors are and what they need allows staff to appropriately aim the messages at a particular target group for maximum effectiveness and customer satisfaction.

5. **Visitor Use Estimates.**—Determine the expected or preferred volume of visitation. This will be a major consideration in determining locations for sign placement, the size of the sign, and the complexity of the message. It will also help in deciding whether or not a sign is, in fact, needed or justified.
6. **Themes.**—A theme should be clearly stated and easily identifiable as the “thread” linking the various parts of the story to be told to the public. A major theme covers a related group of interpretive signs, such as a self-guided interpretive trail, route, or historic facility. Even a sign that will stand alone, such as the one described above, should have a theme.
7. **Design.**—Design is the final link between the visitor and information. Designs for interpretive signs should take into account:
 - a. Colors and images that will attract target visitors.
 - b. Keywords in headings and subheadings that will catch the visitors’ attention and provoke interest.
 - c. Type sizes and styles that will ensure easy readability.
 - d. Height and angle that will ensure comfortable head movement.
 - e. Reading level appropriate to the visitors.
 - f. Height, angle, and positioning that does not obscure the view of the subject being interpreted.
 - g. Sign contrast, lettering, and height will comply with ADAAG 4.30.
8. **Text.**—Language is one of our basic forms of communication. However, written text should be kept to a minimum for an interpretive sign. Text writing is complex. Text must be researched, written, edited, and proofread. Space for text is limited. It occupies a surprisingly large space when properly sized and laid out. Adequate letter size and spacing must be maintained to ensure readability. Also, text must be written at a level that is appropriate for visitors with a wide range of experience and education levels. Visitor interest in text is low. Research has shown that when text blocks exceed 50 to 75 words, visitor interest and attention decline rapidly. Text writing tips:
 - a. Use vivid language and active verbs.
 - b. To reach the widest range of people, write at a 7th- to 9th-grade level.
 - c. Use short sentences and paragraphs.
 - d. Be conversational.

Sign Guidelines

- e. Avoid technical jargon and clichés.
 - f. Avoid gender-specific language (i.e., for fisherman, use angler; for stockmen, use stock handlers).
 - g. Use upper and lowercase lettering for text. Use capitalization only for headings or for emphasis of a word or two.
9. **Examples.**—The following examples illustrate the difference between information text and interpretive text.
- a. ***Information:***
 - (1) PAINTBRUSH (*Castilleia miniata*). The Indian Paintbrush (or painted-cup) is a member of the Figwort family. The flower is an inch or more long, and the calyx tip is scarlet in color. Paintbrush usually grows in the mountains along streams and in wet places below 11,000 feet.
 - (2) Stalagmites, which rise from the floor when dripping water deposits minerals, are usually larger in diameter and more rounded on top than stalactites.
 - b. ***Interpretive:***
 - (1) There's no longer anything remaining of the old cookhouse, with its long table covered with a brightly colored tablecloth, where the miners ate three hearty meals a day. Imagine the breakfast-time aroma of fresh, hot coffee brewing and the sound of eggs and bacon sizzling on the grill. The miners were also served hot cakes, fried potatoes, and toast with homemade jam.
 - (2) Clark's nutcrackers have the habits of crows and the color of jays and are, in fact, cousins to both. The most forward of all birds, they will steal food off the picnic table from under your very nose.
10. **Graphics.**—Illustrations, maps, drawings, photos, colors, type styles, and general esthetics are all encompassed in the graphics development of an interpretive project. It is the combination of these elements that will attract and involve the visitor more than anything else. Use graphics to:
- a. Draw viewer attention.
 - b. Complement the text.
 - c. Enhance the understanding of the illustrated subject.
 - d. Tell a significant story visually.

11. **Organization Identification.**—The Reclamation emblem should be displayed on all interpretive and information signs. The identification should be an integral part of the sign design, and it should usually be subtle. Cooperators' and other appropriate logos, such as a reservoir logo, may also be included, but they, too, should be subtle and an integral part of the sign design.
 12. **Sign Layout.**—Skillful layout and design will provide high-quality signs for effective interpretation. Pay particular attention to the following:
 - a. ***Make the sign the right size:*** Consider the location and the distance from which the sign will be read. Letter size should provide easy legibility from planned viewing distances. (See Chapter V - General Design Guidelines, for size guidance.) Text and graphics are also factors in determining sign size. Consider using standard sign sizes for cost effectiveness. Make the sign no larger than necessary.
 - b. ***Allow the right amount of space around the text:*** The text should not be crowded. Leave enough space between blocks of text and headings and around the border for easy reading. Borders are also helpful to contain the graphics and copy.
 - c. ***Avoid diverting attention from the message:*** Design the support structure to blend and harmonize with the sign and the environment. Low profile signs, for example, should be used on overlooks. Although there are exceptions, interpretive signs are usually rectangular. Unusual shapes compete with the text.
 - d. ***Avoid distractions:*** Odd colors, awkward designs, unusual words, and overemphasis of symbols are examples of distractions.
- E. Construction Materials:** A variety of construction materials are available which, when properly used, have the potential to enhance sign effectiveness. Select sign materials based on appropriateness for the site, longevity, esthetics, cost, required maintenance, etc. Following is a partial list of available materials to consider:
1. **Anodized Aluminum.**—Also known as Duratone, Dura-Etch, and Novalloy. Very expensive, but its long life and low maintenance costs make the product cost effective. Very susceptible to scratching, but it is impervious to weather. Finish is in gold, bronze, or silver tones. Recommended locations would be in high visitor use areas. It is also the material of choice for recognition plaques. Can use photos in the process at extra cost.
 2. **Gator Foam.**—A Styrofoam board faced and backed with illustration board. Image and text are screened onto the paper face after it has been prepared with a coat of paint. Product is for temporary interior displays, presentations, and master plans. Light, durable, and attractive. If it is used outside, it should be enclosed in a

Sign Guidelines

moisture-proof case; however, other materials are better suited for exterior use. Will receive multiple colors, but no photos unless they are glued to the panels.

3. **High Impact Styrene.**—An extremely durable and attractive material best suited for interior use. Similar in quality to fiberglass, except the image and copy are screened on the opaque materials. Can be used for high traffic areas. Will withstand considerable abuse; however, surface of image and copy can be scratched if one works at it. Temperature and weather tolerant.
4. **Embedded Fiberglass.**—Also known as Modulite and Fibrex, it is a process that produces a screen print substrate encapsulated into layers of fiberglass. Available in multiple colors. It is an attractive sign that is very resistant to shattering, weathering, fire, and graffiti and can be applied to virtually any surface. Comes in 1/16-inch and 1/8-inch thicknesses.
5. **Masonite Silk Screen.**—Material comes in 1/4-inch Masonite that is silk screened in multicolor latex enamel. The material is inexpensive, but limited in its applications. Best for interior use in displays or cabinets. Any use outdoors requires a nonpermeable covering as well as a location out of direct sunlight.
6. **Photometal.**—Photometal is an aluminum alloy that is electronically treated to produce a colored, corrosion-resistant surface. It is available in various shades of aluminum, bronze, and gold. Excellent longevity. Weather resistant and relatively vandal resistant.
7. **Plexiglas.**—Common Plexiglas with the screened image on the reverse side. Fairly scratch resistant, but does become brittle with age and will shatter by point impact. Best suited for interior use.
8. **Polycarbonate.**—Also known as Lexan and Tuffak, polycarbonate is a clear material with impact strength about 250 times stronger than glass. It is ultraviolet stabilized and is available in a full range of colors. Comes in 10-, 50-, 75-, and 125-mil thicknesses. Similar to Plexiglas, but it is softer and will not shatter on point impact. A matte velvet finish must be ordered because the gloss finish is very susceptible to scratching. Suitable for either interior or exterior use. The thinner mil (10-23 mil) can be used on Masonite, metal, fiberglass, or other materials and is relatively inexpensive. Image is reverse silk screened. Resolution of the graphics and text suffers slightly in comparison with fiberglass-embedment process, but it is still considered a good product.
9. **Polyethylene.**—“Poly-Print” comes in 1/16-inch and 1/8-inch thicknesses. Durable and applicable to interior use. The low cost of this material makes it attractive for large multiple orders. Polyethylene does not do well outside and loses its image in direct sun.
10. **Porcelain Enamel.**—Also known as Dura-enamel and Enameltec. The process is a fired-on, opaque, glassy coating on metal. Infinite colors, gloss, semigloss, pebble,

or mottled finish are available. It has interior or exterior applications, especially in high visitation areas. It is very weather resistant and vandal proof, except it is easily shattered by bullets and excessive impact. One of the most attractive sign materials on the market. Cost is competitive with the rising costs of embedded fiberglass or metal signs. There is little or no maintenance.

11. Rigid Vinyl.—Material comes in 10-, 20-, and 30-mil thicknesses. Durable, but best used inside because exposure to the elements and ultraviolet rays tends to crack and warp it. Costs are low. Multiple colors can be used.

12. Screened Sign Board.—Direct screen printing on medium density overlay (MDO) sign board. Sheet size is ½ inch by 4 feet by 8 feet, which will make six 22-inch by 32-inch signs per sheet at a very moderate cost. Signs need to be primed and finish-coated with exterior enamel, then sent to a screen printer along with camera-ready artwork. Sign is ready to mount on uprights without having to attach it to a board.

F. Location and Placement: Location and placement of interpretive signs are critical to their effectiveness. Signs should be installed at locations with sufficient visitor traffic to warrant a sign, should be placed in view of the feature being interpreted, and should be accessible to persons with disabilities.

1. Consider the following when selecting sign sites.—

- a. Suitability of the view and environment and how it may be retained during construction, installation, and thereafter.
- b. Relationship of the sign to the point of interest. The point of interest should be obvious.
- c. Locate sign to enhance photographic value of the setting.
- d. Suitable parking.
- e. Availability of restrooms, water, and power.
- f. Locate where vandalism will not be encouraged.
- g. Esthetics of the location.
- h. Barrier-free accessibility.

2. Probable locations may be.—

- a. Active management and research projects.
- b. Overlooks and viewpoints.

Sign Guidelines

- c. Recreation facilities.
- d. Administrative sites.
- e. Unique natural features.
- f. Cultural sites (archeological sites, historic areas, and facilities).
- g. Areas where impacts are being caused by visitors.

3. Consider the following when determining proper sign placement.—

- a. Sun and glare.
- b. Shadows.
- c. Orientation.
- d. Protective shelter needs.
- e. Traffic hazards (vehicle or foot).
- f. Visitor safety, including barrier-free access.
- g. Mounting height and angle will vary, depending on a number of factors. Trail signs should be placed low, about hand level. This is convenient for both wheelchair users and visually impaired visitors. Tilt sign at about a 45-degree angle for ease in reading and rain runoff. Other signs, those designed to be read from a car, for example, may be more easily read at a 90-degree angle.
- h. Adverse effects of wind, insects, cold, heat, dust, bright sunlight, and other distracting elements to the visitor.
- i. Avoid danger or discomfort to the visitors as they approach or stand at the sign. For example, overhanging or dead limbs, dangerous walks, rolling rock, cactus near the trail edge, or rough stones in the trail.

- G. Special Considerations:** Design interpretive signs to provide for the needs of visitors with disabilities and foreign visitors who may have special needs. Consider the use of “curbside” information booths, cassette recordings, map brochure dispensers, two-way communications systems (vehicle to information counters), or other information devices, as feasible. Consult with the area specialist on how best to provide these services. If interpretive signs are provided, they must comply with accessibility standards such as ADAAG 4.30.

1. **Visitors with Disabilities.**—Most people who have vision impairments have some vision, even if they are legally blind. It is important to remember that fewer than 10 percent of the people with visual impairments read Braille. Many people choose to receive information by audio cassettes, large or raised print, or through oral presentations.

Do not set up signs or trails just for one certain group of people, such as “Braille trails” or “handicapped trails.” This assumes that people with disabilities need the protection of the special features, that there is nothing else in the site they would find interesting, and that nothing in the selected area is of value to the general public. Another problem with this type of developed site is that it requires visitors to identify themselves as being different from the rest of the visitor population.

Do not make assumptions about what visitors would like or are capable of doing. Many people with vision impairments are denied opportunities for experiences, such as scenic overlooks, merely because someone assumed they would not get much from the experience. With appropriate description, visually impaired people could enjoy a scenic overlook just as much as a sighted person.

Finally, it is most likely that a disabled person, like other visitors, will be traveling as part of a group. Like any visiting group, couple, family unit, or tour party, some of the visitors’ experience will be illuminated and enhanced by the discussion that goes on among the group members about what they are observing. The interpretive task, therefore, may not be to simply translate the common interpretive message for the disabled member of the party, but to provide a unique message, keyed to the disabled member’s abilities and to senses other than sight, that will allow the disabled member to bring his/her own insights to that dialogue.

2. **Tips.**—

- a. For visually impaired people, essential interpretive or orientation information that is provided in print should also be available through the spoken word, audiotapes, large or raised print (at least 1/4 inch), and, perhaps, Braille.
- b. Important text and graphics should be visible to all visitors.
- c. For greatest readability, characters and symbols should contrast with their backgrounds, either light characters on a dark background or vice versa.
- d. Self-guided trails should include such information as trail length, accessibility level, trail conditions, possible hazards, and cues for proper orientation. Interpretation should be as sensory as possible (e.g., “Feel the soil in a shady area and compare it to soil in a sunny area.”)
- e. Where appropriate, nonvisual cues should be used to inform and direct vision impaired people to signs. Tactile guide strips may be located to assist in travel.
- f. All pathways, ramps, aisles, and clearances should be accessible.

Sign Guidelines

- g. Railings and other barriers should be positioned to provide an unobstructed view to persons in wheelchairs.

- 3. **Bilingual Signing.**—Areas often visited by people whose predominant language is not English may need to include bilingual signing. If duplicate interpretive signs, one in English and one in non-English, are too costly and visually impacting, consider other alternatives, such as developing an interpretive brochure in the second or third languages. Text and graphics from the interpretive signs should be translated in the brochure.

- H. **Evaluating/Monitoring Effectiveness:** Once a sign project is completed and installed, it must be monitored and evaluated as to its success in conveying the message to the intended audience and satisfying their needs. Whether the project involves one sign for a historic lookout, or a series of signs for an interpretive trail, the total effectiveness of the signs(s) must be evaluated (e.g., text, graphics, total communication presentation).

To evaluate interpretive signs, some marketing research techniques include in-house review, review by visitors, or review by experts. Area managers/specialists can consult with a marketer if they are unfamiliar with these techniques.

It is preferable to do test evaluations with signs prior to the fabrication stage. Time for the preinstallation evaluation should be built into the project development. Serious flaws discovered after fabrication and installation can require substantial funds, as well as time to repair. Preinstallation corrections will still take time, but are usually less costly.

To evaluate an interpretive sign's effectiveness, consider the following five criteria:

- 1. **Intrigue.**—Does it excite interest and curiosity? Does it capture the visitor's attention?
- 2. **Imagination.**—Does it communicate in innovative ways, and does it stimulate new and different ideas and concepts about the resource? Does it encourage the visitor to look at familiar things in different ways?
- 3. **Involvement.**—Does it invite or encourage visitor participation? Does it draw the visitor into intimate personal contact with things, so that he or she is more than a spectator?
- 4. **Information.**—Does it convey meaningful information or new knowledge about resources, their management, and the interplay of natural and cultural processes? Is it information the visitor needs if he or she is to feel satisfied about the visit?
- 5. **Influence.**—Will it effect significant changes in visitor attitudes or generate new ones?
- 6. **Accessibility.**—Is the information being communicated to the public available to persons with disabilities?

Chapter V

GENERAL DESIGN GUIDELINES

Design should be completed before the procurement process begins unless design preparation is to be completed under a scope of work as part of the procurement process. After selecting the general sign message, use the following guidance to determine the size and layout of all signs. Several sign components are similar and will be discussed together as they apply to all sign classifications outlined in chapter III. Some flexibility exists for regional diversity when designing signs that are compatible with the surrounding landscape and area themes. Use of native materials is encouraged when specifying particular design types. When deviating from these discretionary Guidelines, coordination with the regional sign coordinator is recommended.

Though the materials specified in these Guidelines are adequate for sign construction, there may be other materials and technologies which are superior and could be used. As funding permits, superior materials are recommended.

- A. Purpose:** This chapter provides a general overview of basic principles, standards, and guidelines that govern design and installation of signs. It also includes information on estimating sign sizes.
- B. Principles:** This chapter contains standards for sign design, shape, color, size, placement, and reflectivity. Specialists developing or using signs should follow these standards to portray a neat, organized appearance; to provide uniformity; to project a professional agency image; and to comply with laws and requirements of memoranda of understanding with Federal, State, and local agencies.

Specialists should consider use of symbols and/or non-English word messages to supplement English word messages on signs in areas that are frequented by non-English speaking visitors.

- C. Sign Objectives:** Design, locate, and maintain signs to:

- Fulfill an important need.
- Command attention.
- Convey a clear, positive, friendly, simple message.
- Generate respect.
- Give adequate time for viewer response.
- Identify Reclamation lands.

Sign Guidelines

D. Sign Design: Design of signs should ensure that:

- Such features as size, contrast, color, shape, composition, and lighting or reflectorization are combined to draw attention to the sign.
- Shape, size, colors, and simplicity of the message combine to produce a clear meaning.
- Legibility and size combine with placement to permit adequate time for viewing and response.

E. Standard, General Purpose Reclamation Signs: Standard, general purpose signs used on Reclamation lands should be either square or rectangular. Elongated rectangular signs, usually decals on posts, are acceptable. However, reading elongated text is difficult. Messages must be clear and concise. Except for elongated signs, where corners are square, all corners will be slightly rounded.

1. Traffic Control Sign Shapes.—The Federal Highway Administration and each State Department of Highways have standardized certain shapes for specific purposes. These shapes should not be used for other purposes along highways where they would cause confusion.

- a. The DIAMOND is used for most warning signs.
- b. The RECTANGLE, with the longer dimension vertical, is used for most regulatory signs and some warning signs.
- c. The PENTAGON, with point up, is used only for School and School Crossing signs.
- d. The PENNANT, with the longer dimension horizontal, is used only for No Passing Zone warning signs.
- e. The OCTAGON is used only for STOP signs.
- f. The EQUILATERAL TRIANGLE, with the point down, is used only for YIELD signs.
- g. The ROUND shape is used for Railroad Advance warning signs and for Civil Defense Evacuation Route signs.

2. **Colors.**—Two different color definitions are used in various portions of this manual. These systems are based on the two most common color reproduction systems used in the printing industry, which are centered on the ubiquitous Pantone Matching System (PMS) of colors.

The first of the two systems would be used for signs that utilize only a few individual colors in their design. This system is based on Pantone spot color definitions, where several thousand different colors have a specific and unique number assigned to them. In this system, every color in the palate can be described and ordered by using this number. Different colors are achieved by mixing a limited number of standard colors which when combined form the desired color. This color is then applied in a solid coat. This is the technique generally employed to produce the thousands of colors available at retail paint stores. If a color is defined in this manual by a PMS number, such as PMS 607U, that definition is based on this palate and the color would be achieved by mixing base colors at a paint supplier.

The second of the two systems would be used for signs that utilize many different colors in their design. This system is based on the Pantone system of process colors, where every color in the design is made up of a mixture of four process colors, all of which are applied in different percentages at the same time to the design. The four process colors are: cyan, magenta, yellow, and black, and this method of reproduction is often referred to in shorthand form as the CMYK. With the exception of silk screening, this is the system used when mechanical or electronic production methods are used to produce signs. Generally, it is not intended for signs designed to be hand colored using individual colors of paint. If a color is defined in this manual using CMYK percentages, then the definition is based on this palate, and the color would normally be achieved by using mechanical or electronic reproduction instead of mixing colors at a paint supplier.

The two palates are related, and colors can normally be translated from one system to the other, usually with good results. All of the colors in the Pantone spot color book can be mixed fairly accurately using combinations of cyan, magenta, yellow, and black, plus white (remember this system was originally developed by the printing industry where white paper is generally used). Conversely, colors that are described with CMYK values can often be matched closely with solid colors from the Pantone spot color palate.

- a. Standard colors for most Reclamation signs shall equal the PMS. Care should be taken to choose standard paints that can be matched to the PMS. If the paint chosen is not equivalent to a Pantone color specified in table 3, a visual or a computer generated match should be made. Stains typically do not have Pantone color equivalents; therefore, a visual or computer generated match will have to suffice for obtaining equivalents for Olympic Stain 707, 713, and Sherwin Williams, Spice Wood, solid stain.

Table 3.—Pantone, CMYK, and Old Pratt and Lambert Comparison Chart

As listed in July 1998 Guidelines	Current or new No.	Pantone equivalent	CMYK
Pratt and Lambert, Alaskan Blue, B763W	Alaskan Blue, 1243	2905U	43,6,0,0
Pratt and Lambert, Congo Brown, 0229A	Congo Brown, 2065	469U	0,51,94,60
Pratt and Lambert, Spectrum Brown, R0187A	Spectrum Brown, 2006	1685U	0,69,100,43
Pratt and Lambert, Black Coffee, R146A	Black Coffee, 2033	4695U	0,79,100,72
Pratt and Lambert, Deep Charcoal, B755A	Deep Charcoal, 2236	532U	100,83,76,0
Pratt and Lambert, Amber White, YG470W	Amber White, 1615	607U	0,0,11,0
Olympic Stain 707	707	N/A	N/A
Olympic Stain 713	713	N/A	N/A
Sherwin-Williams, Spice Wood, B42N15 (solid stain)	B42N15	N/A	N/A

- b. Special purpose posters that rely heavily on illustrations rather than words to send the message (e.g., fire prevention posters) may use other colors.
- c. Colors used in the Reclamation emblem are:
 - Ultramarine blue
 - Brittany blue
 - Bluebird blue
 - White
- d. Certain colors have been standardized by the Federal Highway Administration for certain traffic control purposes. These colors should not be used on other signs along roadways or close to traffic control signs in ways that would cause the viewer to confuse the nontraffic control signs with the traffic control signs. The principal colors and their uses are:
 - RED – Stop or prohibition
 - BLACK – Regulation
 - WHITE – Regulation
 - ORANGE – Construction and maintenance warning
 - YELLOW – General warnings
 - BROWN – Recreational and cultural interest guidance
 - GREEN – Indicated movements permitted, direction guidance
 - BLUE – Motorist services

- F. Agency Name:** Agency name should be centered at the bottom of the sign. Typeface should be Helvetica Bold or another chosen letter style. Both Bureau of Reclamation and the Department of the Interior will be the same font size, and both should be set in all capital letters. However, Bureau of Reclamation may be set in lowercase, if desired. In other instances, such as office signs, Bureau of Reclamation may **not** be in larger typeface than Department of the Interior. Agency names should not be used on fire prevention regulatory signs, on elongated signs, or on special purpose posters.

When used, the name will be set out in one of the forms shown below:

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION**

or

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION**

or

**U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION**

or

**U.S. DEPARTMENT OF THE INTERIOR
Bureau of Reclamation**

- G. Vendor ID:** Vendor IDs should not be permitted on the face of any Reclamation signs.

- H. Reflectorization:** Road and motorized trail signs and other signs intended to be seen at night will be made to reflect the same shape and color both by day and night. Image and portal signs may also be reflectorized if night visibility is needed.

Use engineering grade reflective sheeting for most Reclamation signs. Consider high intensity grade sheeting in unique situations where atmospheric conditions and other factors indicate a need for additional reflection.

- I. Message Formulation:** In formulating the message, use standard (approved) word messages, where applicable. Word legends should be brief, but clearly convey the intended message. The use of symbols on signs is encouraged, provided they clearly convey the intended message.

Sign Guidelines

Under normal driving conditions, there is little time between being close enough to read the sign and passing the sign. Consequently, messages must be short. They should be confined to the essentials (for example, destination or direction).

1. When composing a message, consider the following Guidelines.—

- a. Use no more than four words per message, except where the proper name of a destination is more than four words long.
- b. Use a minimum number of word lines.
- c. Use no more than three lines per message, except where a proper name of a certain size requires more than three lines.
- d. Keep message short by using certain commonly recognized abbreviations (e.g., “Mt.” for “Mount,” “Pt.” for “Point,” “St.” for “Street”). (Do not abbreviate historic proper names (e.g., “Fontenelle” to “Font.,” “Vernal Drains” to “V.D.”))

Pedestrians and those on bicycles and horseback have time to pause and leisurely read sign messages unhurriedly. The rules given above, therefore, do not apply to trail signs. However, the wording of trail signs should be concise. Descriptive text should be relevant and contain only information of general interest.

2. Individual or Group Sign Development.—

- a. ***Planning:*** A sign is a communication tool. It is one of several in a resource specialist’s grab bag. Others are brochures, news releases, websites, direct discussions with a customer or client, radio ads, talks before interest groups, and flyers. These tools should only be used following a communication planning process that identifies both the messages and the intended audience.
 - (1) ***Audience and Message.*** Decide on the audience and the information the audience needs at that particular location.
 - (a) A visitor to a recreation site might wish to know:
 - Length of stay allowed
 - Fees, if any
 - Types of services offered
 - If reservations are needed
 - If pets are allowed
 - Location of trailer dump station
 - Open trails for hiking, horseback riding, or ORVs
 - Restriction on trailer lengths or weight on access roads
 - How to get to the site

(b) An agency may wish to inform visitors about:

- Hazards
- Poisonous snakes
- Emergency phone numbers
- Fee amounts
- Restrictions on firearms
- Restrictions on fires
- Restrictions on pets
- Length of stay limitations
- Protection of the environment
- Historical or interpretive messages
- Traffic regulations

(2) *Alternatives.* A sign is not always the best way to influence visitor behavior. For example, a sign at a campground entrance prohibiting pets is of little use to visitors who have traveled a long distance with their pet to that destination, if that information was not correctly available to them in some form before leaving home. Rather, it would be counterproductive to an agency's intention to provide high-quality service to its clients.

A brochure or map can often convey information more effectively. The information may be very general, or very broad, in geographical coverage and may help the visitor when making long-range plans to use a Reclamation facility.

Campground bulletin boards may be used to display information sheets. Information sheets are easily developed, inexpensive, 8.5- by 11-inch sheets of paper that contain important information about an area. This may be a small site-specific map, a hiking trail map, a list of safety concerns, or a description of environmental cautions.

Brochures and recreation guides that include pictures as well as words are other effective communication tools that can be provided to public land users well in advance of departure for their Federal land destination.

New releases can reach a large urban audience with a desired message. However, the newspaper editor or radio/TV news director must decide if it is newsworthy. Also, if used, the news release may be edited to such a degree that it no longer serves the agency's intended purpose.

Physical controls such as barriers and fences, used to warn visitors to stay on roads, may preclude the need for signs within a given area.

Signs that are part of an enforcement effort usually must be backed up by some administrative action. Thus, a sign giving notice of a restriction or closure does not, in itself, legally create an enforceable closure. The public must be given notice of such closures or restrictions through

appropriate, established channels (e.g., posting in a district office or publication in the *Federal Register*). However, most closures or restrictions are not in effect until the area affected is signed or posted.

Reclamation's website < <http://www.usbr.gov> > and the Federal Government's recreation website < <http://www.recreation.gov> > can provide updated information and available phone numbers and e-mail addresses to obtain additional information.

Physical contact by Reclamation employees, volunteers, rangers, and maintenance personnel can be one of the most effective tools for user information and control and may be more helpful than any of the alternatives.

- (3) *Information Zones*. This term refers to the area's initial point of use, where visitors need certain information before proceeding further. There are three zones:
 - (a) **Exterior Zone**. This zone may vary from 1 mile to 100 miles from the use area. Information disseminated here should allow visitors to prepare for their trip to the interior zone. It is in this zone, for example, that information about pet prohibition at a particular destination should be readily available.
 - (b) **Entrance Zone**. This is the entryway to the destination. Information in this zone should contain most of the warning, controls, hazard identifications, specific use area maps, and fee information.
 - (c) **Interior Zone**. This is the actual destination or point of use. Information within the destination should be minimal and positive. It may include direction signs, restroom signs, campground signs, and other boundary signs. It should not include warning or behavior restriction signs.
- (4) *Message Development*. There are psychological behavior patterns that an agency must consider in developing messages for the public. Those who use the lands as part of their livelihood are driven by important economic considerations. However, most visitors use Federal lands during limited, valuable, nonworking time. Since the visitor is in control of the use of time and space (and expects few or no restrictions over behavior), any restrictions should be reasonable and conveyed in a polite manner.

Within this framework, the user is not open to, or tolerant of, long delays or extensive control. Passive controls placed on visitor behavior must be positive, give assistance, and be supportive; otherwise, users are not receptive to them. Loss of passive control, or a rebellion against it, will likely require mandatory enforcement. That brings into play conflict and confrontation.

In determining message content on signs and other communication tools intended to control or direct visitor behavior, the resource specialist should answer the following questions:

- (a) What is the purpose of the sign or poster? What problem is it trying to solve?
- (b) Who is the intended audience? What do they know about this particular situation?
- (c) What do we want that audience to do, feel, think, or know after seeing the sign?
- (d) What traits of the audience should be considered in developing the sign? What language do they speak? Are there cultural considerations? Are there communication disabilities to be considered?
- (e) What is the message to be given to the target audience?

In developing messages on signs and other communications tools, resource specialists should strive to achieve the following:

- (i) Be positive in approach, uniform in application, and minimal in the quantities of signs produced.
- (ii) Review the message from the visitor's viewpoint: Does it answer the questions? Does the message provide a solution to the visitor's problem or dilemma? Is there sufficient interest for all the information? Is all the information necessary?
- (iii) Keep messages on signs to a single subject. Use two signs to avoid mixing unrelated messages.
- (iv) Keep the message simple, clear, and straightforward.
- (v) Threatening or shocking messages do not necessarily encourage compliance. Use them only in extreme situations, such as where life-threatening hazards exist.

- J. Message Determination:** Before a sign can be laid out, the length of the message and the sign size have to be determined. The Table of Letter Widths and Spacing Guide in appendix 4 provide the units for the width of every letter and the spacing between the letters. The sum of these units is to be multiplied by the letter size factor described in appendix 4. The result represents the length of the word, in inches.

A simple example will illustrate the procedure: a component sign for a marina with a symbol is discussed below (see page 51 for reference.)

Sign Guidelines

1. **First Step.**—Marina is a one-line component sign. The word “marina,” according to the rules of capitalization, is spelled in lowercase letters.

The table of letter widths gives the following values:

m - 39	
a - 26	
r - 22	
i - 15	
n - 27	
a - 26	
<hr/>	
Total	155

2. **Second Step.**—The spacing guide provides the following distances:

between m and a - 3	
a and r - 3	
r and i - 3	
i and n - 3	
n and a - 3	
subtotal 15	
<hr/>	
Total 155 + 15 = 170	

3. **Third Step.**—The sign location calls for a 4-inch-high letter.

The letter size factor is 0.1896.

4. **First Partial Result.**—The word “marina” in 4-inch lowercase letters measures (170 x 0.1896 = 32.232), which is approximately 32-1/4 inches long.
5. **Fourth Step.**—The symbol size for “25 mph” is 12 inches.
6. **Fifth Step.**—The guide to horizontal spacing specifies a distance of one primary message lowercase letter height.
7. **End Result.**—The total message measures:

$$\begin{array}{rclclcl} 32\text{-}1/4 \text{ inches} & + & 4 \text{ inches} & + & 12 \text{ inches} & = & 48\text{-}1/4 \text{ inches} \\ (\text{word}) & & + (\text{space}) & & + (\text{symbol}) & & \end{array}$$

- K. **Sign Size Determination:** The size of the message is now established. Vertical and horizontal margins and, in the case of multiline messages, line spacing must be added. These are specified under the Spacing Guide (see page 50). Positioning of lines, arrows, and symbols is also found in the Spacing Guide.

At this stage, a layout at scale of 1 inch to 1 foot will be drawn up with all elements, including minimum margins. In the earlier example of the “marina” sign, the Spacing Guide stipulates minimum horizontal margins of one lowercase primary message height, both left and right. The lowercase height of the example was 4 inches. Thus,

$$\begin{array}{ccccccc} 4 \text{ inches} & + & 48\text{-}1/4 \text{ inches} & + & 4 \text{ inches} & = & 56\text{-}1/4 \text{ inches} \\ (\text{margin}) & + & (\text{message}) & + & (\text{margin}) & & \end{array}$$

the minimum width of the sign required.

The Spacing Guide for vertical margins stipulates that a space be allowed between the top edge of a sign and a symbol or message. The space should be equal to 1-1/2 primary lowercase letter height above the message or one-third the symbol height above the symbol, whichever creates the greater total sign height. Thus, for vertical margins:

4-inch margin
12-inch symbol (4-inch letters with arrow)
4-inch margin
20 inches is the minimum height required for the sign

The approximate measurements of the sign are 4 feet, 8-1/4 inches wide by 1 foot, 8 inches high. The layout is now complete. Even though the above example refers to a simple situation, more complex ones follow the same pattern.

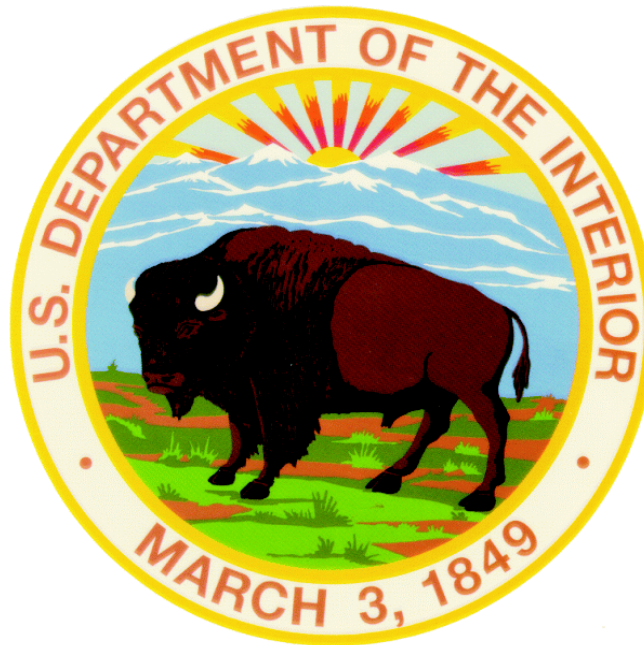
- L. Symbols/Seals/Emblems:** The Federal International Symbol System will be adopted by Reclamation to supplement its sign program (see appendix 5). Appendix 5 does not include all the international symbols that are available. Additional symbols can be viewed by accessing the Bureau of Land Management’s website at <http://lm0005.blm.gov:80/gis/narsc/intersymboldump.html>. It will be the option of the operating office coordinator to determine whether to use symbols and worded messages together on the same signs. Interior seal and Reclamation emblem are to be used where indicated in these Guidelines. Metal seals/emblems are recommended for outdoor use.

If a reservoir logo has been developed and is consistent with reservoir brochures and other published material, placement of the reservoir logo should be graphically incorporated along with other symbols/seals/emblems, where appropriate.

Color Guide

U.S. Department of the Interior Seal

March 2002



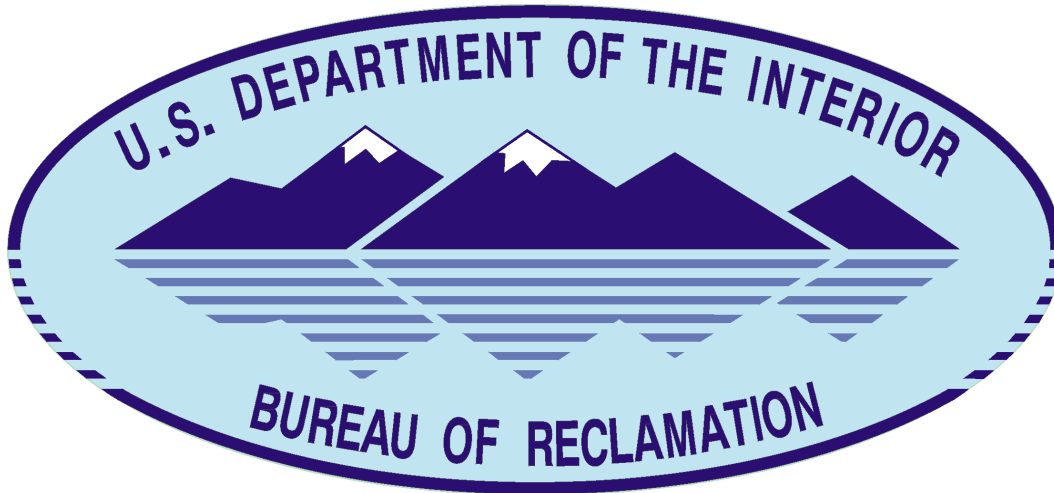
Seal Element	Color	Cloth	Fed. Std.	PMS	CMYK
Destination Band	White	67101	27886	White	0, 0, 0, 0
Inner/outer borders and bullets	Golden Yellow	67104	13655	116	0, 15, 94, 0
Letters and numbers	Gold Brown	67194	10115	471	0, 56, 100, 18
Sky	Forget-Me-Not Blue	67168	25526	304	30, 0, 6, 0
Sun	Golden Yellow	67104	13655	116	0, 15, 94, 0
Rays (alternating from sun)					
Inner	Scarlet	67111	11105	200	0, 100, 65, 15
Middle	Golden Orange	67100	Mix to match	137	0, 34, 91, 0
Outer	Golden Yellow	67104	13655	116	0, 15, 94, 0
Mountains	Old China Blue	67169	25177	543	56, 15, 0, 6
Snowcaps	White	67101	27886	White	0, 0, 0, 0
Grass shaded	Green	67129	14110	364	72, 0, 100, 43
Grass shaded	Emerald Green	67128	14187	368	65, 0, 100, 0
Dirt	Gold Brown	67194	10115	471	0, 56, 100, 18
Bison	Brown	67136	10091	181	0, 72, 79, 47
Details	Black	67158	17038	Black	0, 0, 0, 100
Horns	White	67101	27886	White	0, 0, 0, 0
Outlines	Black	67138	17038	Black	0, 0, 0, 100

The seal can also be printed black on white or white on black.

Color Guide

Bureau of Reclamation Emblem

March 2002



Emblem element	Color	Cloth	Yarn	Fed. Std.	PMS	CMYK
Border, mountains, letters	Ultramarine Blue	65010	67118	None	Reflex Blue	100, 72, 0, 6
Background	Brittany Blue	80130		15526	551	30, 0, 0, 15
Mountain reflections (lines)	Bluebird Blue	70211		15092	542	76, 23, 0, 9
Snowcaps	White	65005		17925	White	0, 0, 0, 0

The emblem can also be printed black on white or white on black.

The emblem colors are specified in paragraph E.2.c. (above). One-color versions may also be used. If a one-color version is used, the emblem can only be used in the positive form. If the emblem is to be used against a dark background in which the emblem border would be lost, the emblem should be superimposed on a white oval, so the emblem border will stand out.

1. **Seals/Emblems.**—Signs and posters may carry both the Interior seal and Reclamation emblem. They must be either vertically placed in the upper, left-hand corner (Interior above, Reclamation below) or set independently on either side of the sign in a convenient location (Interior left, Reclamation right). Refer to Design Types B_{1a} and B_{1b}.
 - a. On fire prevention regulatory signs, only the Reclamation emblem should be used. It should be placed in either the lower left or lower right corner, (preferably the lower right).

Sign Guidelines

- b. On special purpose posters, only the Reclamation emblem should be used. It should be placed in the lower, right-hand corner. A “reversed” or negative emblem will not be used. Instead, use the positive emblem on an oval patch of white, slightly larger than the emblem.
 - c. On elongated signs, the Reclamation emblem should be used alone in a boxed area at the top or the bottom of the sign.
 - 2. **Agency Identification.**—The standard Reclamation emblem is the only symbol used to identify the Bureau of Reclamation. It must not be modified. Use the Reclamation emblem on all entrances to designated locations on Reclamation lands. Identify Reclamation as an agency of the Department of the Interior.
- M. Letter Styles:** The letter styles selected for most Reclamation signs are Ancient Egyptian and Helvetica Medium; however, each office may select letter styles and a typeface that meet their individual needs. The only exceptions are standard roadway signs that will conform to MUTCD standards and interpretive signs that will be established during the planning phase of development. If signs are provided in conjunction with other agencies, their choice of letter styles should be taken in consideration. Most signs will use Ancient Egyptian letter styles, particularly major and minor identification signs. Signs requiring a large number of words, such as information signs, can be lettered with Helvetica Medium. Sans serif lettering with consistent stroke width is easier for people with visual impairments to read. In situations where it is imperative that a message be communicated, sans serif should be used.
- 1. **Typeface.**—Helvetica, Roman, Bold, Italic, and other forms may be used. Italic is to be used sparingly and for special effect.
 - 2. **Upper and Lowercase.**—Use of normal upper and lowercase letters throughout the sign is preferred. All uppercase will be used only for sign headline copy and for special emphasis. In all cases, body copy will follow normal upper and lowercase rules.
 - a. **Typeface:** Several additional typefaces commonly used on Reclamation signs are or could be:
 - (1) **News Gothic Bold.** A sans serif typeface comparable to the Helvetica Bold, but less heavy stroke. Used primarily on administrative, information, and road direction signs. Used to spell out United States Department of the Interior and Bureau of Reclamation. Used as body type for sign message.
 - (2) ***Souvenir Demi.*** A moderate, serif, italic typeface.
 - (3) **Helvetica.** A strong, easily read, sans serif typeface.

- (4) **Egyptian.** Easily read letter style that can be used on major identification signs.

N. Signposts and Bases: Where applicable, signposts used on standard highway regulatory, warning, and directional signs should be made of treated, 4- by 6-inch Douglas fir or redwood. Breakaway-type mounting posts should be considered, when feasible. A single post should be used for signs up to 3 feet in length and double posts for signs more than 3 feet long. Signs should be attached to posts in a manner that does not interfere with message legibility, while remaining easily removable for maintenance. When signs are mounted on dams, buildings, or other structures, the need for posts will be eliminated. The signs should be bolted to the structure, allowing a space of several inches between the back of the sign and the wall face to give the sign a raised appearance.

For signs located within or immediately adjacent to campgrounds and day-use areas that have grills and fire pits, it may be practical to use metal steel or reinforced aluminum for sign supports. In these instances, all metal surfaces should be painted or galvanized.

Identification and interpretive signs should have bases that support the design character of the area. Guidelines for the base height and angle have been established by the Uniform Federal Accessibility Standards and the Americans with Disabilities Act Accessibility Guidelines. However, base designs should be approved by the area office sign coordinator or by the area office sign coordinator in conjunction with the regional sign coordinator and the public affairs officer and, where appropriate, the regional accessibility coordinator.

The location of all signs along roadways should comply with MUTCD standards. The following chart shows the approximate required distance between signs and the required distance of advance warning of directional signs before intersections:

Speed limit	Distance from sign to intersection or between signs (in feet)
20	100
30	150
40	300
50	500
55	750

There are no standards for the location of pedestrian signs, but their physical surroundings play an important role. Pedestrian signs should be highly visible and not obstructed by vegetation or physical features of the area.

Care should be taken to ensure that signs directed to one activity do not interfere with another activity. Safety of the visitor should always be a consideration when determining both the message and location of signs.

Sign Guidelines

1. **Placement and Installation.**—Uniformity of placement and installation helps users to see the signs and determine where the directed action is to take place. Select locations that maximize the opportunity for the sign to convey its intended message.
 - a. **Placement:** As a general rule, with the exception of the “No Passing” pennant, place signs on the right-hand side of the roadway, as close to the standard location as possible. Consider the following Guidelines when selecting sign installation locations:
 - (1) Place signs where they provide adequate time for viewer response, considering such things as approach speed, road conditions, etc.
 - (2) Select locations that minimize viewing obstructions. Some common placement locations to be avoided, if possible, include:
 - (a) Dips in the roadway or trail.
 - (b) Just beyond the crest of a hill.
 - (c) Where the sign may interfere with the normal operation of the facility.
 - (d) Too close to trees or other foliage that could cover the face of the sign.
 - (3) Place the sign within the viewer’s “cone of vision.”
 - (a) As speed increases, driver concentration increases.
 - (b) As speed decreases, driver concentration wanes. At 25 mph, the natural eye focus point lies 600 feet ahead of the car. At 45 mph, it lies 1,200 feet ahead.
 - (c) As speed increases, the driver’s peripheral vision decreases. On low-speed roads, the signs can be set farther back from the right-of-way and still be visible and effective. At 25 mph, a driver’s “cone of vision” is 90 degrees. At 45 mph, it narrows to 65 degrees; and at 60 mph, it is only 40 degrees.
 - (d) As speed increases, the driver’s ability to focus on foreground detail decreases. At 40 mph, the closest point of clear vision lies 80 feet ahead of the car. At 60 mph, the driver can see clearly only that detail within an area 110 to 1,400 feet in front of the car and within that 40-degree “cone of vision.”
 - (4) Guidelines for installation of Warning, Regulatory, and Guide signs on roads are as follows:

- (a) **Height** - The bottom of the sign should be a minimum of 3 feet above the level of the roadway on roads posted for speeds of 30 mph and over. For roads posted for speeds less than 30 mph, the bottom of the sign should be set a minimum of 30 inches above the ground where the sign is being placed.
 - (b) **Lateral Clearance** - The distance from the edge of the roadway to the inner edge of the sign can range from 6 to 12 feet. The normal minimum is 6 feet. In cases where roadside topography precludes the 6-foot minimum, the inner edge of the sign shall be no closer than 2 feet from the edge of a roadway with no shoulder and no closer than 2 feet from the outer edge of a shoulder.
 - (c) **Canting** - Normally, signs should be mounted approximately 93 degrees to the direction of, and facing, those they are intended to serve. This canting helps reduce mirror reflectivity. Sign faces are normally vertical; but on up and down grades, it may be desirable to tilt from the vertical to improve readability.
- (5) Sign coordinators and road engineers should be aware of “sign clutter,” a situation in which new and different signs are added to a location over time, and the overall effect is to force the viewer to wade through a mass of uncoordinated information to obtain that information he needs. “Sign clutter” situations should be reevaluated to combine, redesign, and eliminate signs to reduce the clutter.
- b. **Sign Mounts:** Normally, signs should be individually erected on separate posts or mountings, except where one sign supplements another or where route markers and directional signs must be grouped. Signs should be located so they do not obscure each other and so they are not hidden by other objects.
- (1) *Posts.*
- (a) Posts are used to hold signs in a proper and permanent position and to resist swaying in the wind. Generally, wood or metal posts are used. In areas where sign supports cannot be sufficiently offset from the road edge, use a suitable breakaway or yielding design. Wood posts with less than 24 inches of cross section do not require breakaway design. Concrete bases for signposts should be flush with the ground level.
 - (b) Metal posts should be unpainted galvanized metal. All hardware used to affix signs to either wood or metal posts should be either aluminum or galvanized.

Sign Guidelines

- (c) After a sign is installed, the ends of the bolts should be snipped off and the threads upset or fractured to prevent removal of the nuts by vandals or thieves.
 - (d) The number and size of posts per sign should be proportional to the size of the sign. For signs up to 36 inches across, use one post. For signs ranging from 37 to 72 inches across, use two posts. From 72 inches to 96 inches across, use three posts.
- (2) **Massive Bases:** Reclamation's large administrative/portal/entry signs should be mounted on bases that match the size and mass of the sign, as well as complement the surrounding landscape. These bases are normally located outside the roadside recovery area, usually at least 30 feet away from the edge of the roadway travel surface or off the highway right-of-way. Three basic kinds of bases are:
- (a) Rock base.
 - (b) Brick base.
 - (c) Wood skirt base.

O. Determination of Letter Size: The letter size for signs is determined by the maximum allowable vehicle speed at that point of the road system. The letter size for pedestrian signs is determined by location, volume, and type of visitors using the area, rather than by speed. If people with disabilities are using the sign message, letter point size should comply with accessibility guidelines. To be easily read, the sign should have sufficient color contrast between letters and background.

The following speed rules pertain to the sign's primary message only. Letter size for a sign's secondary message will be two-thirds the height of the primary message. (Refer to design procedure for each sign category for primary/secondary identification.)

1. Roads.—

- a. Speed: 46 mph to 60 mph; lowercase height and thickness of arrow shaft, 8 inches; 18-inch recreation symbols.
- b. Speed: 36 mph to 45 mph; lowercase height and thickness of arrow shaft, 6 inches; 18-inch recreation symbols.
- c. Speed: 25 mph to 35 mph; lowercase height and thickness of arrow shaft, 4 inches; 12-inch recreation symbols.
- d. Speed: 24 mph or less; lowercase height and thickness of arrow shaft, 3 inches; 12-inch recreation symbols.

2. Pedestrian and Trail Signs.—

- a. Short messages to be read from some distance: lowercase height and thickness of arrow shaft, 2-1/2 inches.
- b. Direction, distance, instructions, listings in moderate visitor use areas where pedestrian traffic is channeled by walks, etc.: lowercase height and thickness of arrow shaft, 2 inches.
- c. Plaques, markers, and object identification: capital height, 1-1/2 inches; lowercase height and thickness of arrow shaft, 1 inch; 8-inch recreation symbol.
- d. Description sign texts: capital height, 1 inch; lowercase height and thickness of arrow shaft, 5/8 inch; 8-inch recreation symbol.

The Guidelines for letter and space size may be adjusted to meet special conditions, such as composition, emphasis, and so forth. Never should sizes be less than those indicated in the charts for particular uses or speeds. As a rule, 1 inch of letter height can be read from a distance of 50 feet; 2 inches from 100 feet, and so on.

P. Rules for Capitalization:

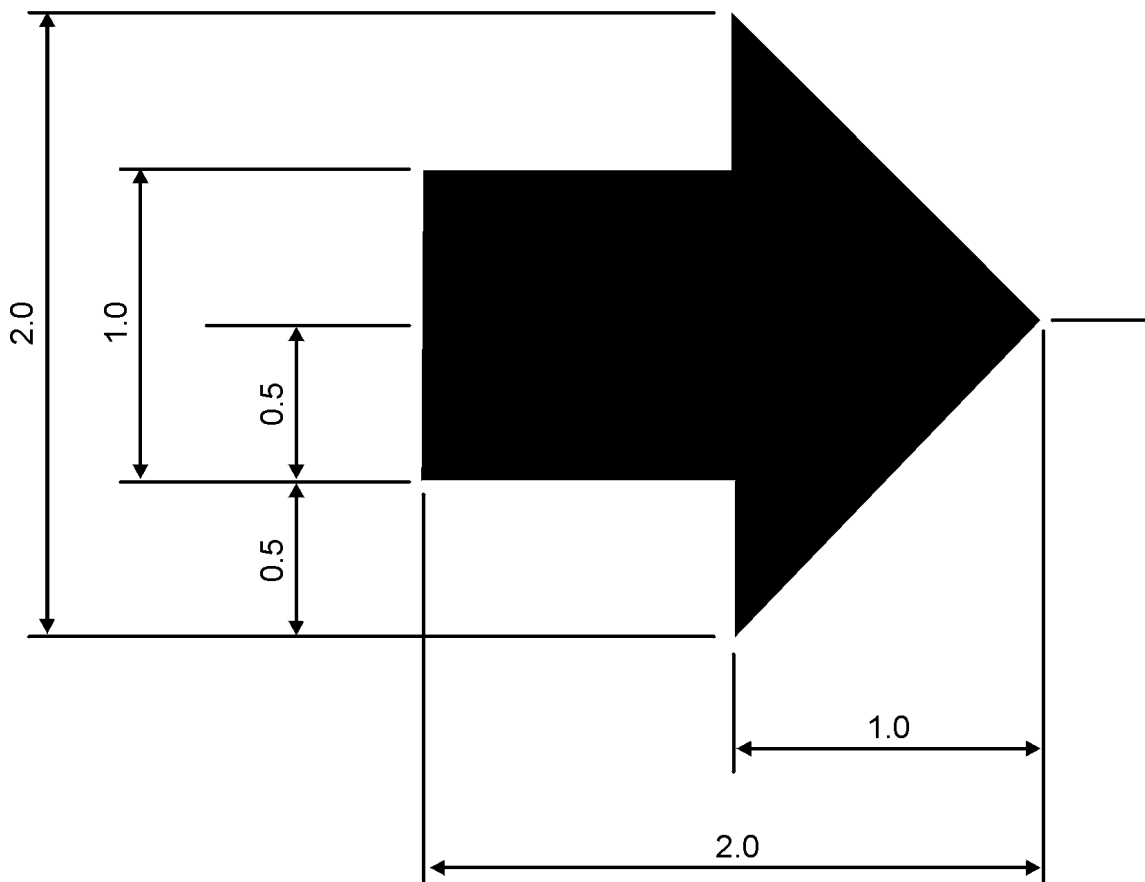
1. Signs should use both uppercase and lowercase letters. The first letter of all proper nouns should be capitalized.
2. Identification signs should use uppercase and lowercase letters (example: “Aspen Grove Campground, Upper Colorado Region”). The Department of the Interior and Bureau of Reclamation designations shall be spelled with all capital letters.
3. Informational signs should use uppercase and lowercase letters.
4. Directional signs should use uppercase and lowercase letters.
5. Regulatory/warning signs should follow MUTCD standards.
6. Temporary signs should follow the rules set forth in the category to which they belong.
7. Concessionaire signs should follow all applicable rules set forth above.
8. Boating signs and snowmobile signs should follow the rules set forth in the Uniform Waterways Marker System and the National Snowmobile Association Standards.
9. No specific guidelines have been established for interpretive signs. However, the format should conform to the overall interpretive program.

Q. Spacing Guide:

1. **Arrows.**—Arrows can be used to point in four directions: straight up, straight down, straight left (90 degrees), and straight right (90 degrees).

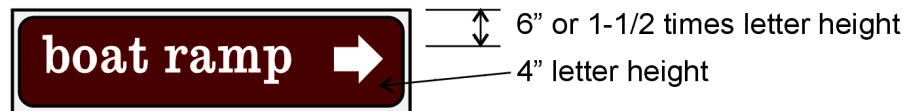
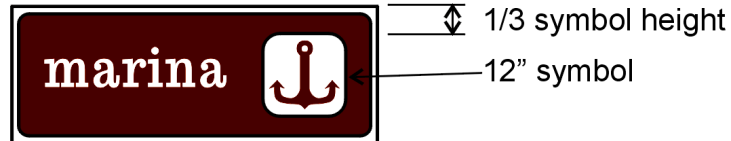
Arrows are to be positioned either to the right or left of the message or symbol so that the arrow is pointing away from the message or symbol, rather than to it. On trail signs for pedestrians, which contain long listings of directions, the arrow may be placed above or below the message for greater clarity. If, at certain locations, a narrow sign is preferred, and the position of an arrow to the right or left of the message requires an excessively wide sign, the arrow may be placed below the message.

Arrows will conform to these proportions:

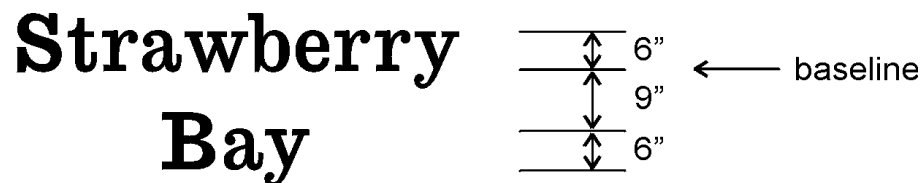


2. Minimum Vertical Spacing.—These proportions apply to all signs except Design Types A and B.

- a. Between the top edge of a sign and a symbol, arrow, or message, allow space equal to 1-1/2 primary lowercase letter height above the message or one-third the symbol height above the symbol, whichever creates the greater total sign height.



- b. Between baseline of first line and top of second line of primary message, allow space equal to 1-1/2 primary lowercase letter height.

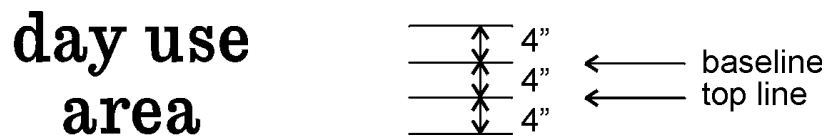


- c. Between baseline of primary message and top line of a secondary message, allow space equal to one primary lowercase letter height.

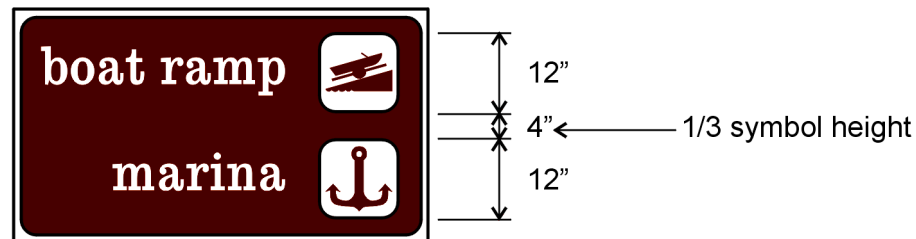


Sign Guidelines

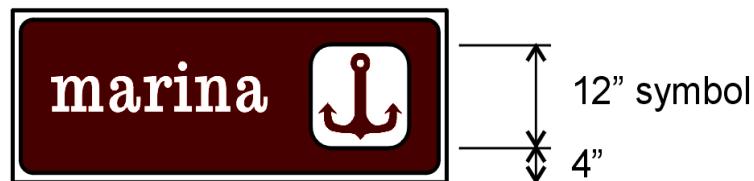
- d. Between baseline of a secondary message and top line of the second line and each succeeding line of a secondary message, allow space equal to one secondary lowercase letter height.



- e. Between the bottom edge of the top symbol and top edge of lower symbol, allow space equal to one primary lowercase letter height or one-third symbol height, whichever is greater.



- f. Between the bottom edge of the lowest symbol or message, allow space equal to 1-1/2 primary lowercase letter height below the message or one-third the symbol height below the symbol, whichever creates the greater total sign height.



- g. Signs with a symbol or arrow to the left or right of the message will have the message centered vertically on the symbol or arrow.

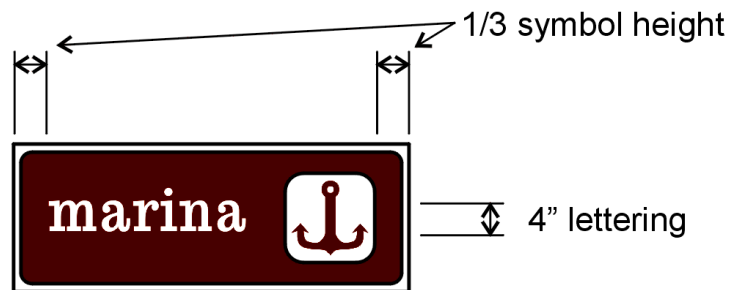


- h. In a two-line message, the arrow should be vertically centered between the two.

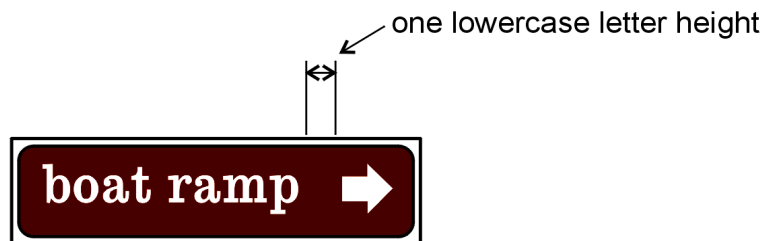
**Chicken Creek
Campground** ➔

3. Minimum Horizontal Spacing.—These proportions apply to all signs except Design Types A and B.

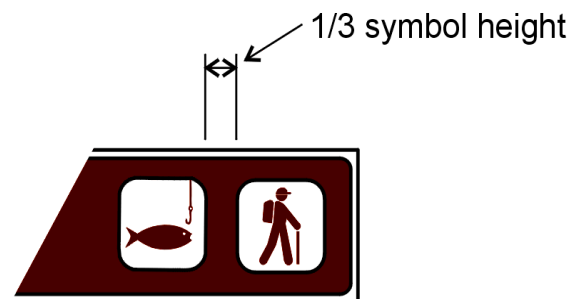
- a. Between the left and right edge of the sign and the message, arrow, or symbol, allow space equal to 1-1/2 lowercase letter height or one-third symbol height.



- b. Between the first and last letter of a message and an arrow or symbol, allow space equal to one lowercase letter height or one-third symbol height.



- c. Between symbols, allow space equal to one lowercase letter height or one-third symbol height.



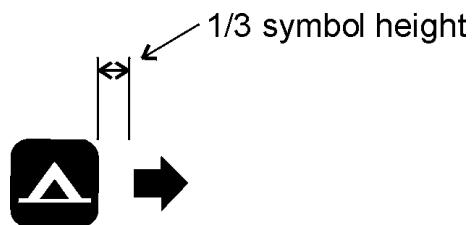
Sign Guidelines

- d. Symbols placed beneath or above a message will be centered on the message.

day use area



- e. Between symbols and arrows on signs with no written message, allow a space equal to one-third symbol height between them and center the arrow vertically on the symbol.



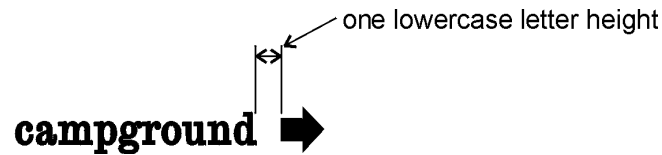
- f. Between words in a primary message, allow space equal to one primary lowercase letter height.

Sage Grouse

- g. Between words in a secondary message, allow space equal to one secondary lowercase letter height.

recreation area

- h. Arrows should be aligned with baseline of appropriate message, allowing a space equal to one lowercase letter height between arrow and baseline.



- i. All margins are measured from the outside of the sign face.
- j. **Borders:** Signs that require borders, except Design Type A₁, should typically have a white border set in 1/4 inch from the edge of the sign face; however, different border colors may be used as necessary for interpretative signs, etc., depending on the background colors. Line weight should be appropriate to the size and overall design of the sign. Corners should be slightly rounded to match the sign. Borders on elongated signs and posters should be square. Borders should be used on fire prevention regulatory signs and posters but are not required on special purpose posters.

The width of the border should be determined by the width of the sign. The border width should be 3/16 inch for each foot of sign width. Corner radii for the border should be 1 inch per foot of sign width. In no case should the border be less than 3/8 inch wide. For signs that have routed borders, a 1-inch offset from the edge of the sign face is recommended to prevent chipping.

- R. **Sign Materials:** Reclamation signs and posters can be manufactured from a variety of materials, including wood, metal, plastic, fiberglass, and cardboard. These materials are called "substrates." The "message" is either painted or printed (usually by silk screening) onto the substrate. Other materials commonly used in the manufacturing process include reflective sheeting, paint, stain, and vinyl edge film.

As a general rule, the softer or more porous a substrate material is, the better paints will penetrate the surface and create a solid bond. The harder or more slick the material, the more likely the paint is to dry on the surface. The softer substrates are more easily damaged from deep gouging by vandals. The harder substrates are more likely to resist gouging and destruction of the substrate, but the paint is more easily chipped away.

The harder and less porous the surface, the better decals and pressed-on vinyls will adhere.

Sign Guidelines

Some commonly used substrates for Reclamation signs are:

1. **High-Density Overlay (HDO) Plywood.**—Marine-quality, 3/4-inch plywood with one side covered with a high density, slick material (the overlay), to which adhesives cling quite strongly. Commonly used as the substrate for pressed-on materials such as reflective vinyl. This substrate should be used extensively for the larger signs. It weathers well, and holes in the vinyl can be easily repaired.
2. **Medium-Density Overlay (MDO) Plywood.**—Marine-quality, 3/4-inch plywood, with one side covered with a smooth but more porous overlay than HDO. This substrate accepts paint much better than HDO. The porosity of the overlay allows the paint to bond with the substrate better.
3. **Medium-Density Fiberboard (MDF).**—A pressed-particle board product that accepts paint (silk screening) very well and weathers well. MDF is gaining adherents among transportation departments for large highway signs (green, blue, and brown).
4. **Plastics.**—Sign making can involve a variety of plastics:
 - Acrylic, or Plexiglas, is a hard, rigid material that withstands abrasion well but breaks easily. It is often used as a clear protective covering over another sign.
 - Polycarbonate, or Lexan, is similar to the acrylic panel but is softer, with a greater flex. Its softness makes it more likely to be marred by dust and blowing sand.
 - Polyethylene and polypropylene are fairly common materials that are suitable for most routine sign applications. They are soft materials that have sufficient rigidity to stand up as small signs, but not so rigid that they are easily broken. They come in basic colors, and accept paint (silk screening) well. Generally, they weather well; however, their softness makes them easy prey to vandals wielding sharp or pointed instruments. Initial and replacement costs are low.
5. **Carsonite®.**—Carsonite is a patented material that combines fiberglass and epoxy resins to make a strong but flexible substrate. Used most often in a thin, vertical format, it is also used for small routine signs. Its hard, impervious surface is best used as a substrate for decals, although silk screening is possible. It is very resistant to impact and weather. Initial and replacement costs are low.
6. **Aluminum.**—A long used, common substrate for routine, smaller signs. Message usually silk screened onto substrate. Easily and significantly damaged by bullets and other forms of vandalism. It has good weather resistance. Medium initial and replacement costs.

7. **Tyvek.**—A fibrous, paper-like material that has good short-term resistance to inclement weather and to animal damage. Very flexible and light. Easily stapled to wood.
 8. **Cardboard.**—A paper product that degrades quickly in inclement weather. Accepts paint (silk screening) well, depending on the slickness of the surface. Easily nailed or stapled. Used primarily for seasonal posters.
 9. **Porcelain Enamel on Steel.**—This material is highly resistant to scratches, impacts, and weathering. Most often used on interpretive signs, it offers a very appealing appearance, but at a high initial and replacement cost. It lends itself well to the use of graphics. While expensive, it has a lifetime of 20 years or more.
 10. **Fiberglass Embedment.**—In this process, a paper image is embedded in a fiberglass/epoxy-resin panel. Preparation of the first paper image is initially a high cost. Second, third, and subsequent copies can be quickly and cheaply made at the time of the original and put aside for later embedment at relatively low cost to replace a damaged or stolen original. The fiberglass resists scratching, impact, and weathering very well.
 11. **Metal.**—Engraved or acid etched metals, aluminum, and stainless steel are often used for signs. Such signs have a long service life, are generally good or very good in their resistance to weather, and fair or poor in their resistance to scratching or impact. Initial cost is generally medium to high, as is the replacement cost.
 12. **Redwood.**—Routed redwood signs have been a Reclamation standard for a long time. These types of signs are expensive because of the high material and fabrication costs.
 13. **High-Density Foam Boards.**—Three-dimensional signs made by cutting a matte and sandblasting to the desired depth. Sand blasting and mattes can also be used to make three-dimensional wood signs from 2-inch-thick material.
- S. **Manufactured Signs:** Specifications for premanufactured signs should be followed per manufacturer's instructions, regardless of the procurement source.

Chapter VI

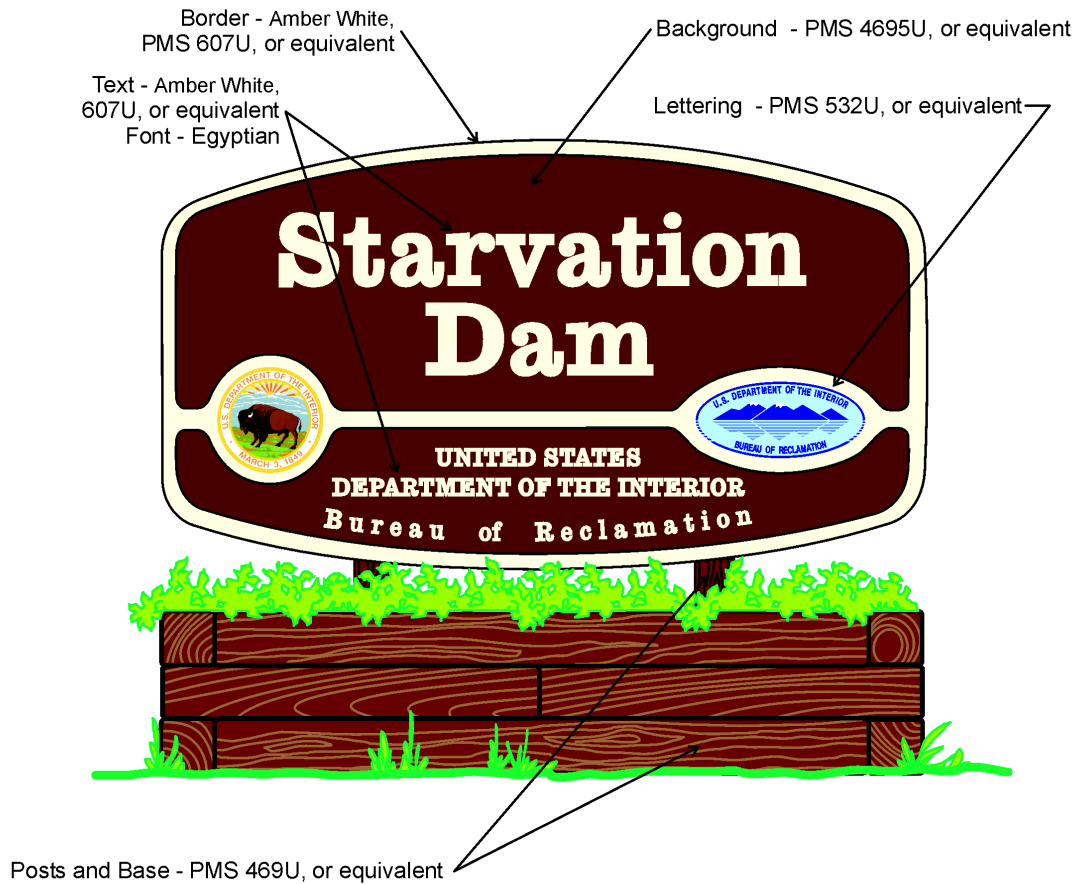
SPECIFIC DESIGN GUIDELINES

A. Design Type A₁: Identification sign.

1. **Shape.**—Extended oval (see example).
2. **Sign Board Size.**—Varies according to length of message and speed of observer.
3. **Sign Board Material.**—Two-inch dimension redwood laminated on edge, 3/4-inch MDO with 60-60 black overlay, or any of the listed substrates on pages 56 and 57.
4. **Sign Board Fabrication.**—Whenever signs with glue laminated joints are constructed, the joints should be doweled and a marine type glue used. Signs that have two or more glue joints should be backed with an appropriate material to prevent cupping, warping, or other distortion.
5. **Sign Face.**—Scotchcal, or equivalent, film or polysilicone base paint. The blue portion should be Pantone 2905U, or equivalent. The brown portion, if redwood, should be stained with Olympic Stain 707, or equivalent. The border should be stained with Sherwin Williams, solid stain, Spice Wood, B42N15, or equivalent. If the sign board material is MDO, the brown portion should be Pantone 469U, or equivalent. The border should be painted with Pantone 4695U, or equivalent.
6. **Sign Base.**—No standard designs. It is recommended that materials found naturally around the site be repeated in the base. If the sign is identifying a structure or office building, it should match those materials used in the construction, if suitable.
7. **Method of Anchoring Sign.**—Wood or steel posts bolted or set in concrete. Use of vandal-proof nuts is encouraged.
8. **Lettering.**—Lettering can be of Scotchlite film, or equivalent, routed or flat, and painted or painted with a silk screen. Black letters should be Pantone 532U, or equivalent. White letters should be Pratt and Lambert, Pantone 607U, or equivalent. Letter size should be determined from information contained in chapter V.

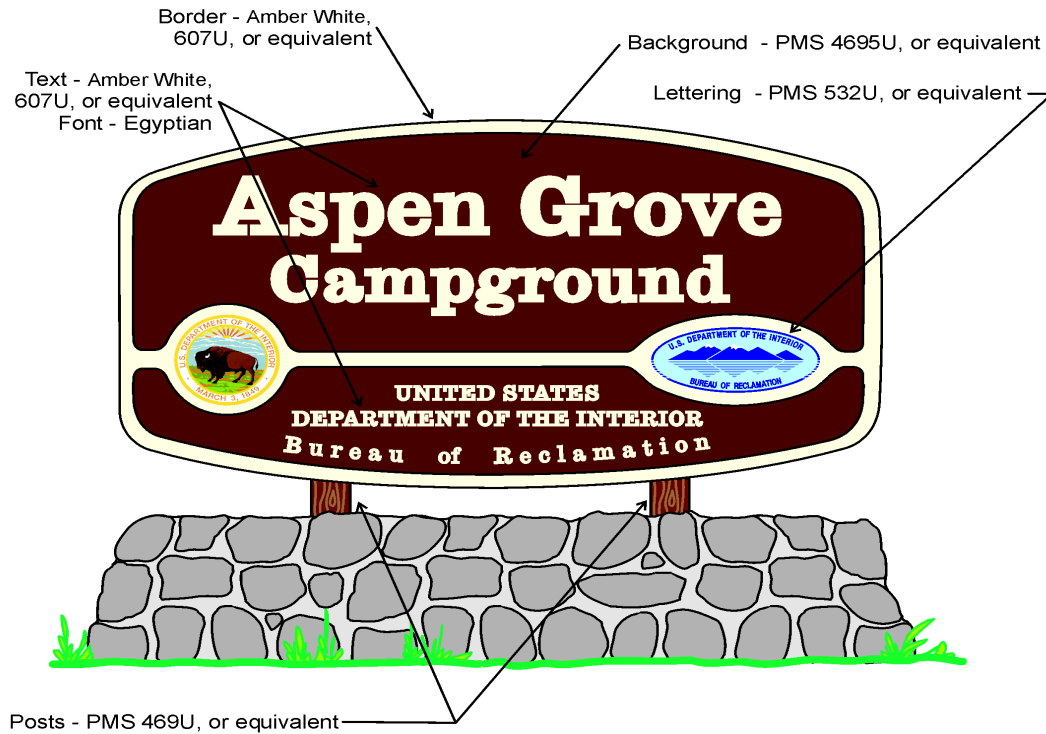
NOTE: The graphic examples in this chapter use either blue (Pantone Color Matching System 2905U) or brown (Pantone 4695U) for the background color. Brown is recommended for the background color; however, blue may be used in certain situations, such as entrance signs or dam or reservoir overlook signs. In either case, the lettering for text and border should always be white (Pantone 607U). In addition, an Egyptian letter style has been used for the examples; however, other letter styles may also be used.

Sign Guidelines



Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type A₁ - Identification Sign



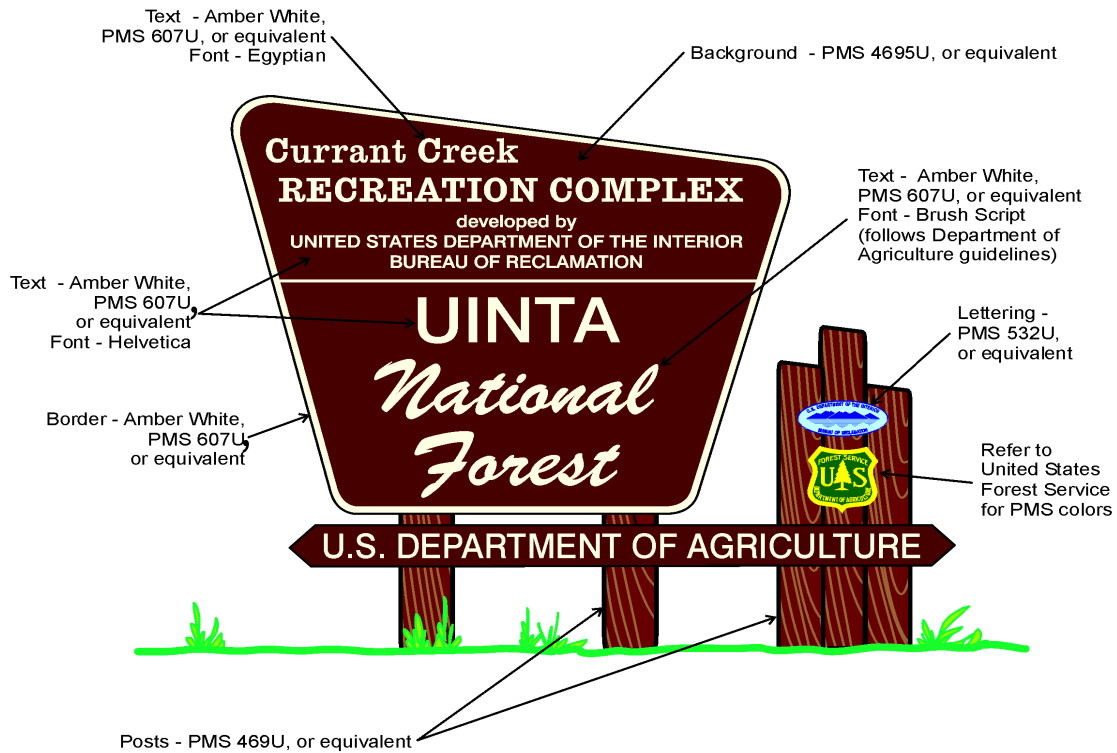
Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type A₁ - Identification Sign

B. Design Type A₂: Identification sign.

Examples for this type of sign are shown on the following pages. These signs will vary from agency to agency. Specific design requirements will be developed through discussions with each managing entity. The office sign coordinator should be responsible for establishing typical designs agreeable to all parties involved. It is recommended that signposts/supports, as shown on the second example of this design type, do not extend above the main face of the sign.

One fundamental requirement applies to all signs of this type. Each sign should have the Bureau of Reclamation designation lettered on the main body of the sign board, including Reclamation's emblem.



Design Type A₂ - Identification Sign

Sign Guidelines



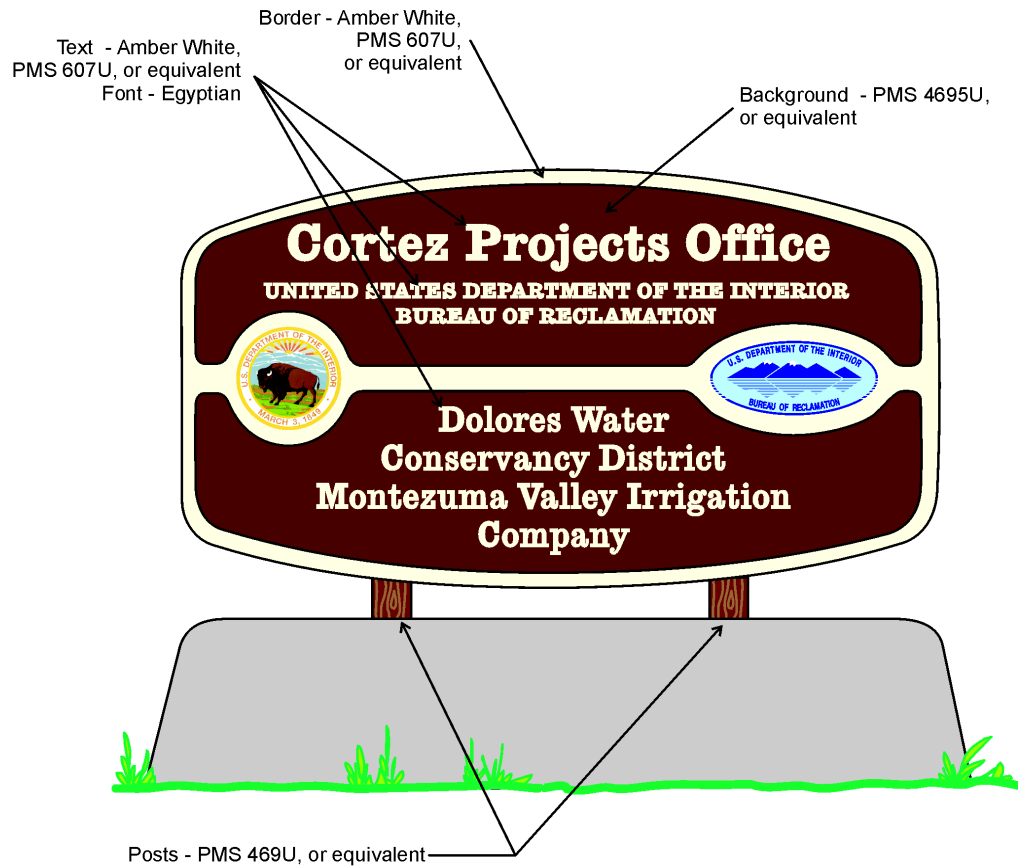
Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type A₂ - Identification Sign

C. Design Type A₃: Identification sign.

An example for this type of sign is shown on the following page. In signing situations where Reclamation is the dominant entity, sign designs should closely follow the guidelines shown for Design Type A₁. On the other hand, when another agency has the dominant role in an office, they should be responsible for designing a sign that will adequately identify Reclamation. However, use of Reclamation sign designs should be encouraged.

Sign Guidelines



Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

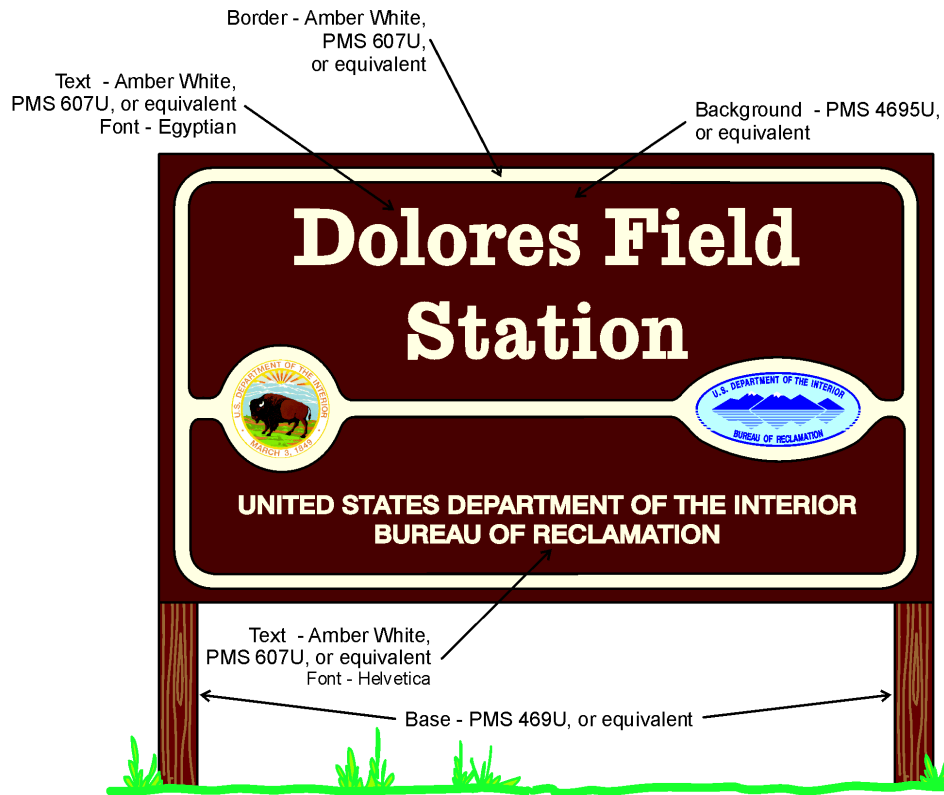
Design Type A₃ - Identification Sign

D. Design Type B₁: Identification sign.

1. **Shape.**—Rectangular.
2. **Sign Board Size.**—Varies according to length of message and speed of observer.
3. **Sign Board Material.**—Two-inch redwood laminated on edge, 3/4-inch MDO with 60-60 black overlay, or any of the listed substrates on pages 56 and 57.
4. **Sign Board Fabrication.**—Whenever signs with glue-laminated joints are constructed, the joints should be doweled and a marine type glue used. Signs that have two or more glue joints should be backed with an appropriate material to prevent cupping, warping, or other distortion.
5. **Sign Face.**—Plywood sign board should be treated with Scotchcal, or equivalent, film or painted surface; color of film should be 3M, Recreation Brown; color of paint should be Pantone 1685U, or equivalent, and Pantone 2905U, or equivalent. Redwood sign and board should be stained with Olympic Stain 707, and the blue portion should be painted with Pantone 2905U, or equivalent.
6. **Sign Supports.**—Stained redwood or treated Douglas fir posts, 4 by 6 inches. Posts should be buried and concrete encased at least 36 inches below ground level. The stain color should be Olympic Stain 713, or equivalent. Signs may also be attached to buildings, bridges, dams, etc., where appropriate. Supports should be flush with the top of the sign.
7. **Method of Anchoring Sign.**—One-half-inch-diameter carriage bolts long enough to extend from the sign face through the back of the posts. The bolts should not protrude more than 3/4 inch beyond the signpost. Large washers and nuts should be used to secure the bolts. The rounded bolt heads on the sign surface should be treated with a matching paint or stick-on film. Use of vandal-proof nuts is encouraged.
8. **Lettering.**—Lettering can be of Scotchlite film, or equivalent, routed or flat, and painted or painted with a silk screen. Scotchlite White, or equivalent, should be used for the film letters; Pantone 607U, or equivalent, should be used on the painted letters. Letter size should be determined from information contained in chapter V.

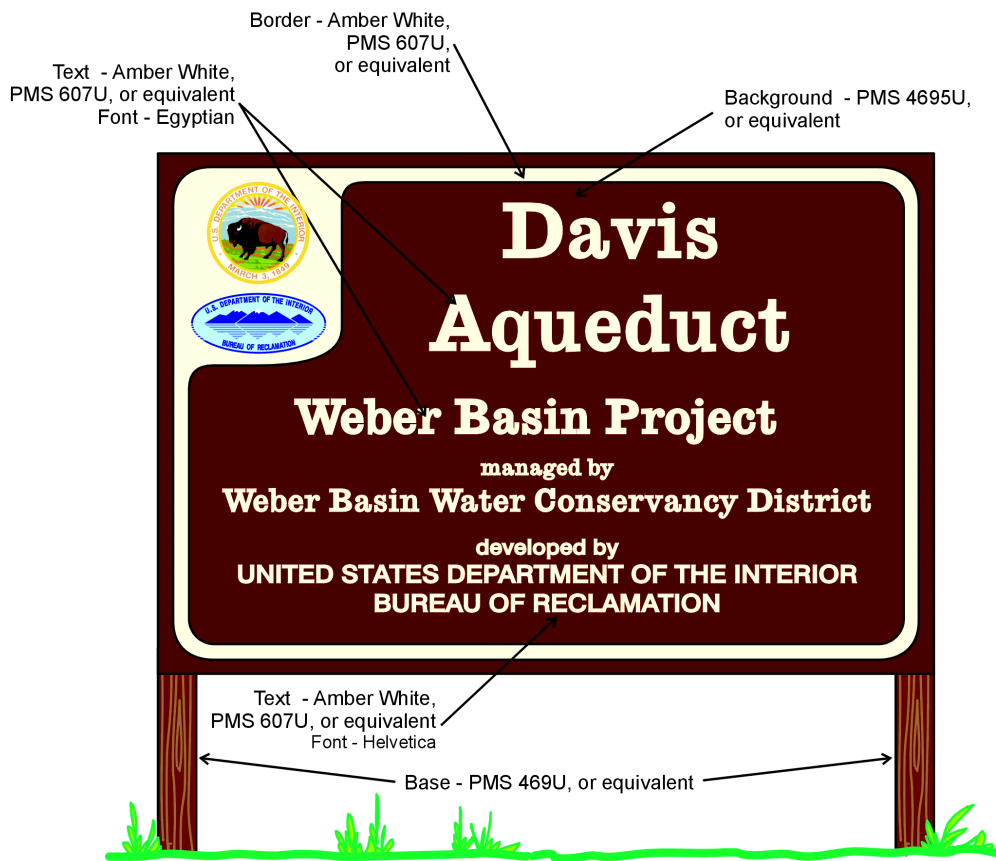
NOTE: The graphic examples in this chapter use blue (Pantone Color Matching System 2905U) for the background color. However, brown (Pantone 4695U) may also be used. In either case, the lettering for text and border should always be white (Pantone 607U). In addition, an Egyptian letter style has been used for the examples; however, other letter styles may also be used.

Sign Guidelines



Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type B_{1a} - Identification Sign



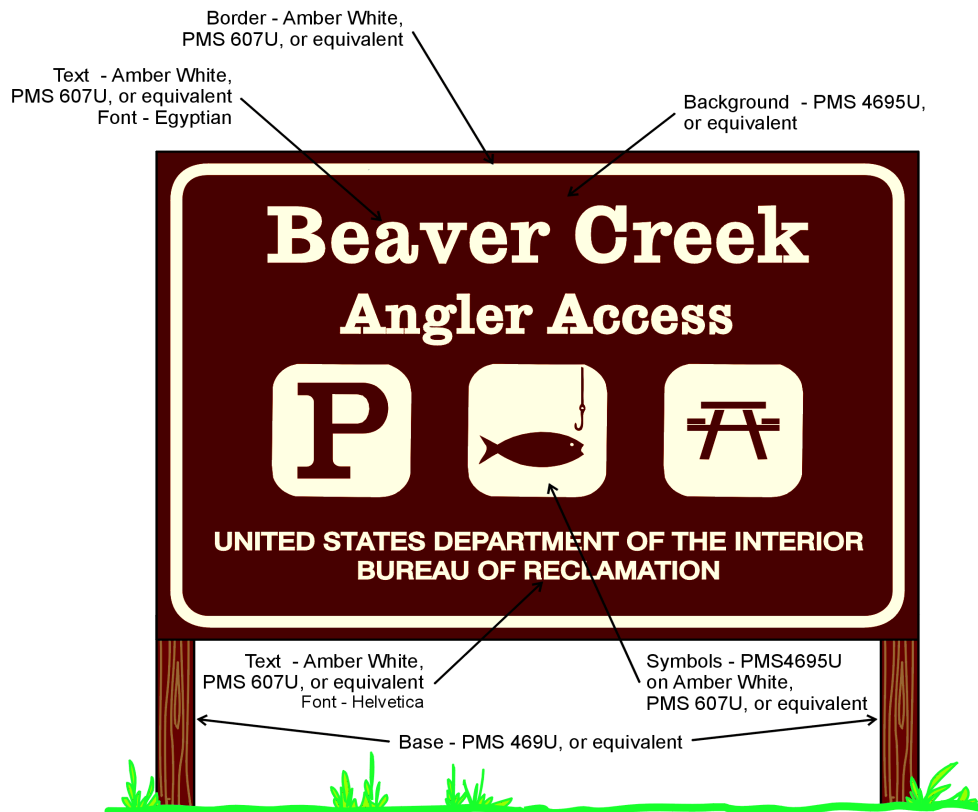
Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type B_{1b} - Identification Sign

Sign Guidelines

E. Design Type B₂: Identification sign.

An example for this type of sign is shown on the following page. In signing situations where Reclamation is the dominant entity, sign designs should closely follow the guidelines shown for Design Type B₁. When another agency has the dominant role, that agency should design a sign that will adequately identify the Bureau of Reclamation. However, use of Reclamation sign designs should be encouraged.



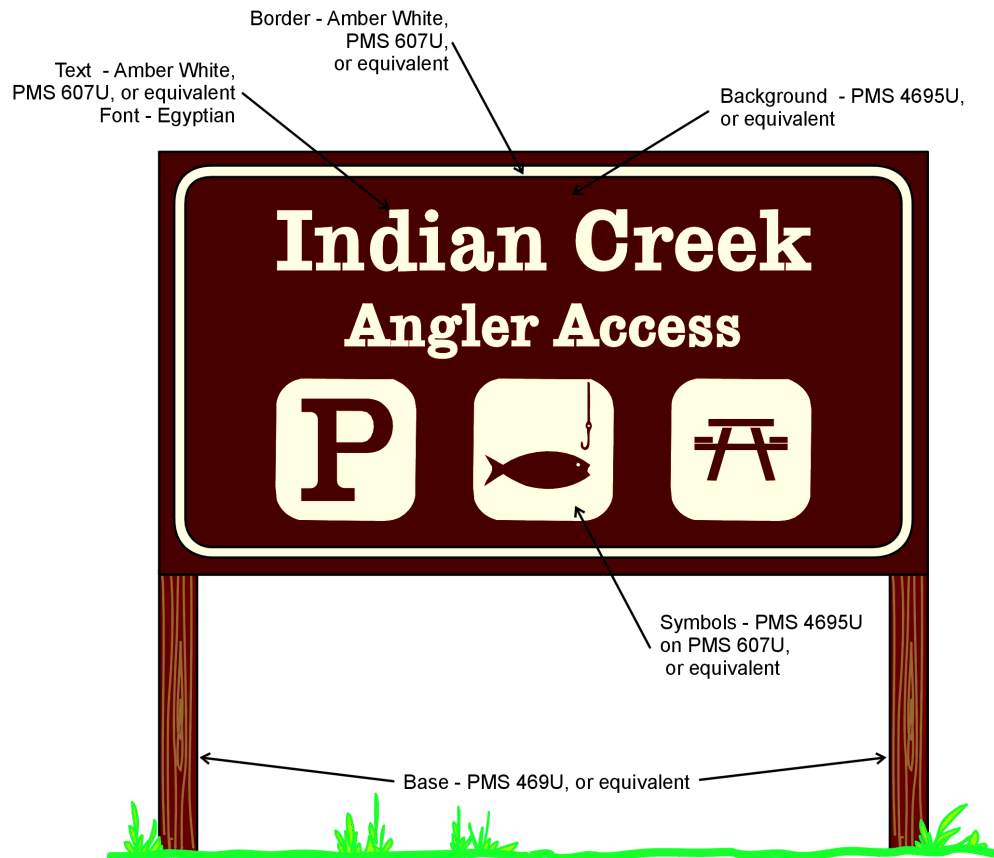
Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type B₂ - Identification Sign

F. Design Type C: Recreation Component sign.

1. **Shape.**—Rectangular.
2. **Sign Board Size.**—Varies according to length of message and speed of observer.
3. **Sign Board Material.**—Two-inch redwood laminated on edge, 3/4-inch MDO with 60-60 black overlay, or any of the listed substrates on pages 56 and 57.
4. **Sign Board Fabrication.**—Whenever signs with glue-laminated joints are constructed, the joints should be doweled and a marine type glue used. Signs that have two or more glue joints should be backed with an appropriate material to prevent cupping, warping, or other distortion.
5. **Sign Face.**—Scotchcal, or equivalent, film or painted surface; color of film should be 3M, Recreation Brown; color of paint should be Pantone 1685U, or equivalent.
6. **Sign Supports.**—Stained redwood or treated Douglas fir posts, 4 by 6 inches. Posts should be buried and concrete encased at least 36 inches below ground level. The stain color should be Olympic Stain 713, or equivalent. Signs may also be attached to buildings, bridges, etc., where appropriate. Supports should be flush with the top of the sign.
7. **Method of Anchoring Sign.**—One-half-inch-diameter carriage bolts long enough to extend from the sign face through the back of the posts. The bolts should not protrude more than 3/4 inch beyond the signpost. Large washers and nuts should be used to secure the bolts. The rounded bolt heads on the sign surface should be treated with matching paint or stick-on film. Use of vandal-proof nuts is encouraged.
8. **Lettering.**—Lettering can be of Scotchlite film, or equivalent, routed or flat, and painted or painted with a silk screen. Scotchlite White, or equivalent, should be used for the film letters; Pantone 607U, or equivalent, should be used on the painted letters. Letter size should be determined from the information contained in chapter V.

NOTE: The graphic examples in this chapter use blue (Pantone Color Matching System 2905U) for the background color. However, brown (Pantone 4695U) may also be used. In either case, the lettering for text and border should always be white (Pantone 607U). In addition, an Egyptian letter style has been used for the examples; however, other letter styles may also be used.



Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

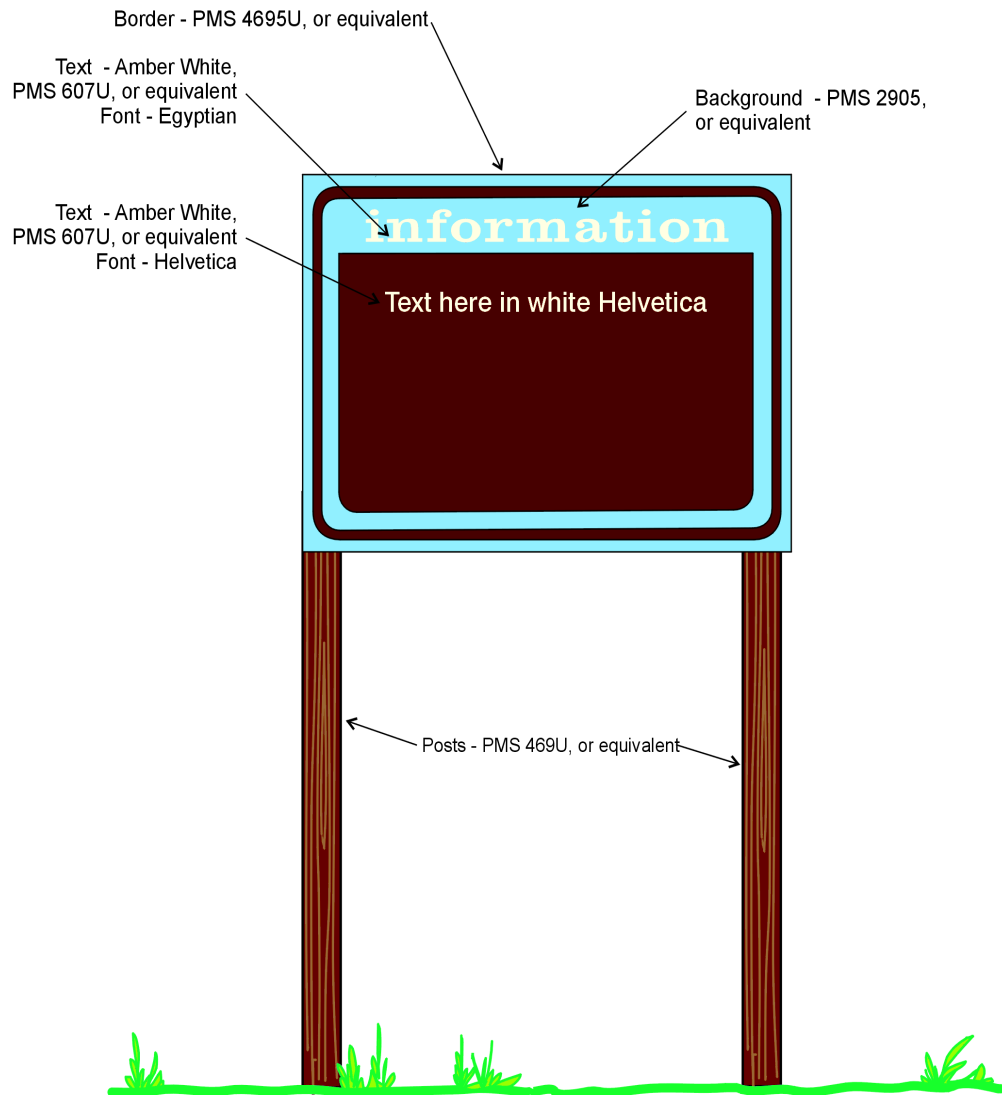
Design Type C - Identification Sign

Sign Guidelines

G. Design Type D: Information—Bulletin Board sign

1. **Shape.**—Rectangular.
2. **Sign Board Size.**—Four feet long, 3 feet wide.
3. **Sign Board Material.**—Two-inch redwood laminated on edge, 3/4-inch MDO with 60-60 black overlay, or any of the listed substrates on pages 56 and 57. Close cellular black rubber mat inset should be used for rack surface (see drawing, Design Type D).
4. **Sign Board Fabrication.**—Whenever signs with glue-laminated joints are constructed, the joints should be doweled and a marine type glue used. Signs that have two or more glue joints should be backed with an appropriate material to prevent cupping, warping, or other distortion.
5. **Sign Face.**—Scotchcal, or equivalent, film or painted surface; color of film should be 3M, Recreation Brown; color of paint should be Pantone 1685U, or equivalent.
6. **Sign Supports.**—Stained redwood or treated Douglas fir posts, 4 by 6 inches. Posts should be buried and concrete encased at least 36 inches below ground level. The stain color should be Olympic Stain 713, or equivalent. Signs may be attached to buildings, bridges, etc., where appropriate. Supports should be flush with the top of the sign.
7. **Method of Anchoring Sign.**—One-half-inch-diameter carriage bolts long enough to extend from the sign face through the back of the posts. The bolts should not protrude more than 3/4 inch beyond the signpost. Large washers and nuts should be used to secure the bolts. The rounded bolt heads on the sign surface should be treated with a matching paint or stick-on film. Use of vandal-proof nuts is encouraged.
8. **Lettering.**—Lettering can be of Scotchlite film, or equivalent, routed or flat, and painted or painted with a silk screen. Scotchlite White, or equivalent, should be used for the film letters; Pantone 607U, or equivalent, should be used on the painted letters. Letter size should be 3-inch lowercase.

NOTE: The graphic examples in this chapter use blue (Pantone Color Matching System 2905U) for the background color. However, brown (Pantone 4695U) may also be used. In either case, the lettering for text and border should always be white (Pantone 607U). In addition, an Egyptian letter style has been used for the examples; however, other letter styles may also be used.

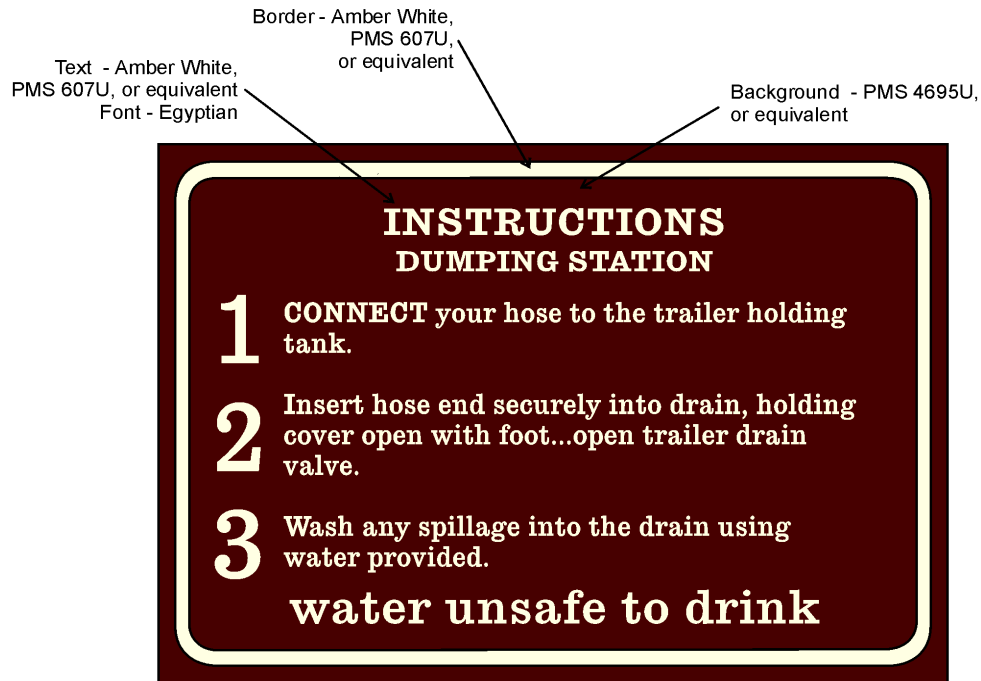


Design Type D - Information—Bulletin Board Sign

H. Design Type E: Information—Instructional sign

1. **Shape.**—Rectangular.
2. **Sign Board Size.**—Varies according to length of message and speed of observer.
3. **Sign Board Material.**—Two-inch redwood laminated on edge, 3/4-inch MDO with 60-60 black overlay, or any of the listed substrates on pages 56 and 57.
4. **Sign Board Fabrication.**—Whenever signs with glue-laminated joints are constructed, the joints should be doweled and a marine type glue used. Signs that have two or more glue joints should be backed with an appropriate material to prevent cupping, warping, or other distortion.
5. **Sign Face.**—Scotchcal, or equivalent, film or painted surface; color of film should be 3M, Recreation Brown; color of paint should be Pantone 1685U, or equivalent.
6. **Sign Supports.**—Stained redwood or treated Douglas fir posts, 4 by 6 inches. Posts should be buried and concrete encased at least 36 inches below ground level. The stain color should be Olympic Stain 713, or equivalent. Signs may also be attached to buildings, bridges, etc., where appropriate. Supports should be flush with the top of the sign.
7. **Method of Anchoring Sign.**—One-half-inch-diameter carriage bolts long enough to extend from the sign face through the back of the posts. The bolts should not protrude more than 3/4 inch beyond the signpost. Large washers and nuts should be used to secure the bolts. The rounded bolt heads on the sign surface should be treated with a matching paint or stick-on film. Use of vandal-proof nuts is encouraged.
8. **Lettering.**—Lettering can be of Scotchlite film, or equivalent, routed or flat, and painted or painted with a silk screen. Scotchlite White, or equivalent, should be used for the film letters; Pantone 607U, or equivalent, should be used on the painted letters. Letter size should be determined from the information contained in chapter V.

NOTE: The graphic examples in this chapter use blue (Pantone Color Matching System 2905U) for the background color. However, brown (Pantone 4695U) may also be used. In either case, the lettering for text and border should always be white (Pantone 607U). In addition, an Egyptian letter style has been used for the examples; however, other letter styles may also be used.



Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

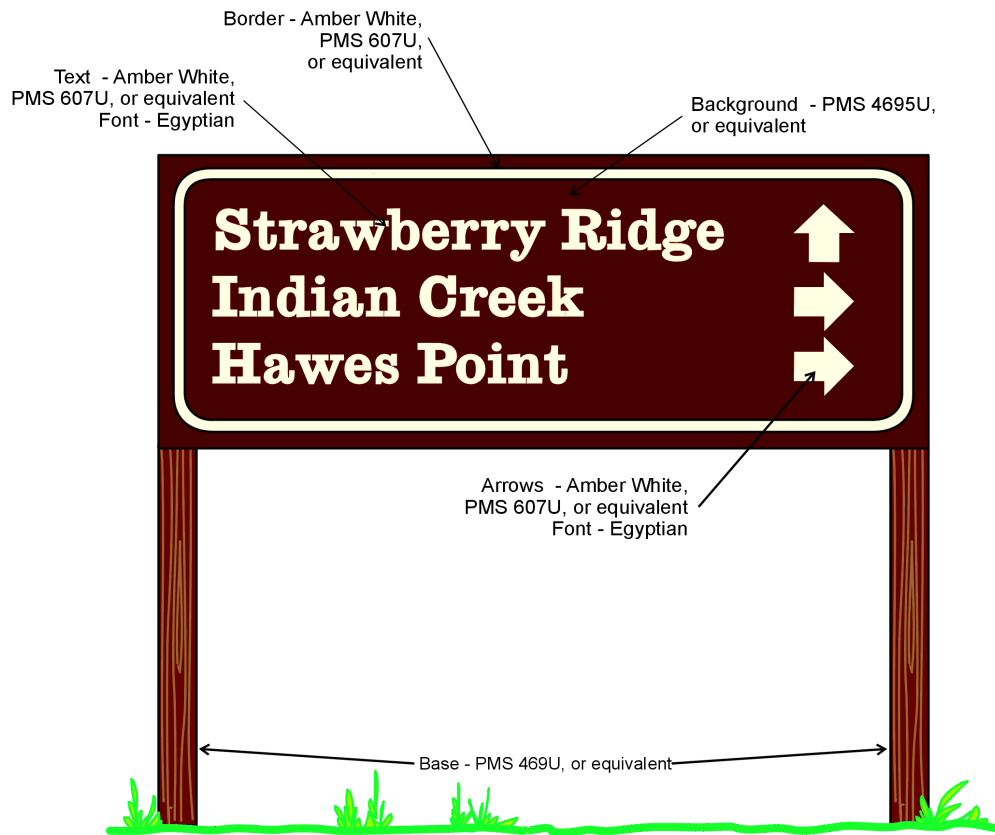
Design Type E - Information—Instructional Sign

Sign Guidelines

I. Design Type F: Directional signs

1. **Shape.**—Rectangular.
2. **Sign Board Size.**—Varies according to length of message and speed of observer.
3. **Sign Board Material.**—Two-inch redwood laminated on edge, 3/4-inch MDO with 60-60 black overlay, or any of the listed substrates on pages 56 and 57.
4. **Sign Board Fabrication.**—Whenever signs with glue-laminated joints are constructed, the joints should be doweled and a marine type glue used. Signs that have two or more glue joints should be backed with an appropriate material to prevent cupping, warping, or other distortion.
5. **Sign Face.**—Scotchcal, or equivalent, film or painted surface; color of film should be 3M, Recreation Brown; color of paint should be Pantone 1685U, or equivalent.
6. **Sign Supports.**—Stained redwood or treated Douglas fir posts, 4 by 6 inches. Posts should be buried and concrete encased at least 36 inches below ground level. The stain color should be Olympic Stain 713, or equivalent. Signs may also be attached to buildings, bridges, etc., where appropriate. Supports should be flush with the top of the sign.
7. **Method of Anchoring Sign.**—One-half-inch-diameter carriage bolts long enough to extend from the sign face through the back of the posts. The bolts should not protrude more than 3/4 inch beyond the signpost. Large washers and nuts should be used to secure the bolts. The rounded bolt heads on the sign surface should be treated with a matching paint or stick-on film. Use of vandal-proof nuts is encouraged.
8. **Lettering.**—Lettering can be of Scotchlite film, or equivalent, routed or flat, and painted or painted with a silk screen. Scotchlite White, or equivalent, should be used for the film letters; Pantone 607U, or equivalent, should be used on the painted letters. Letter size should be determined from the information contained in chapter V.

NOTE: The graphic examples in this chapter use blue (Pantone Color Matching System 2905U) for the background color. However, brown (Pantone 4695U) may also be used. In either case, the lettering for text and border should always be white (Pantone 607U). In addition, an Egyptian letter style has been used for the examples; however, other letter styles may also be used.

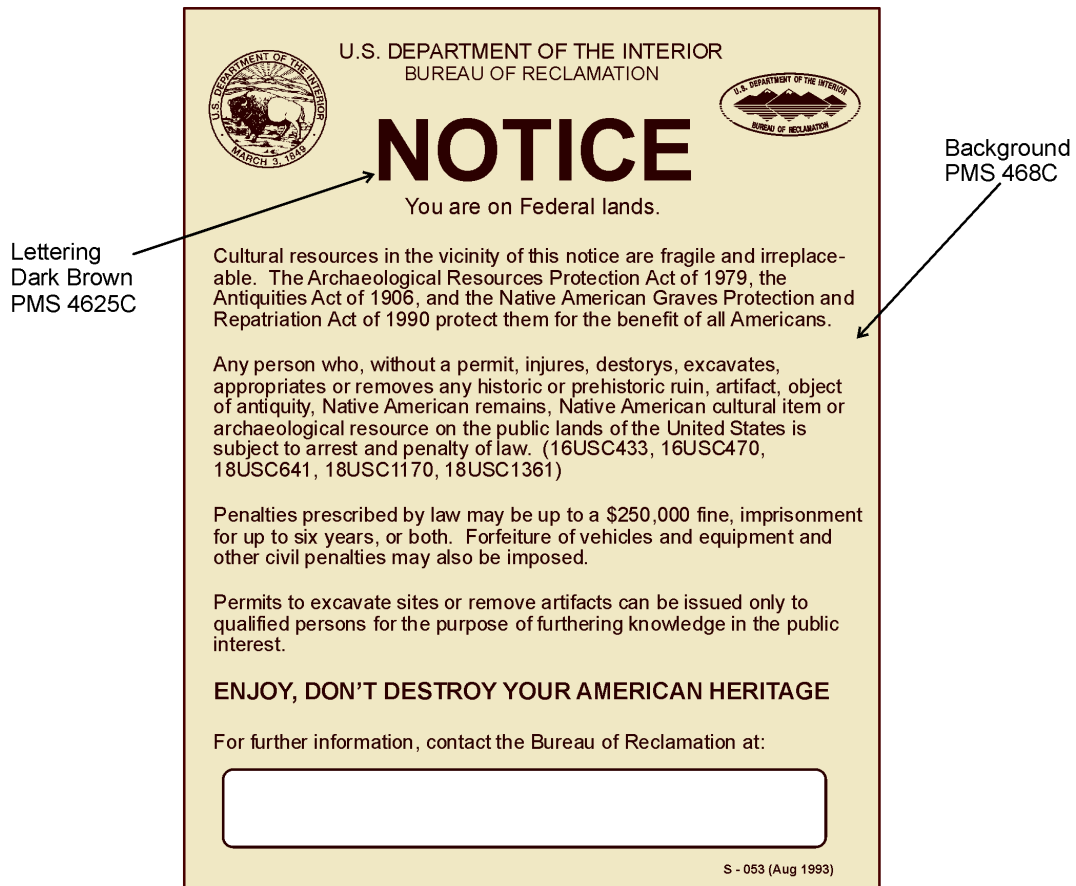


Note: If blue, PMS 2905U is used for background, then border should be brown, PMS 4695U.

Design Type F - Directional Sign

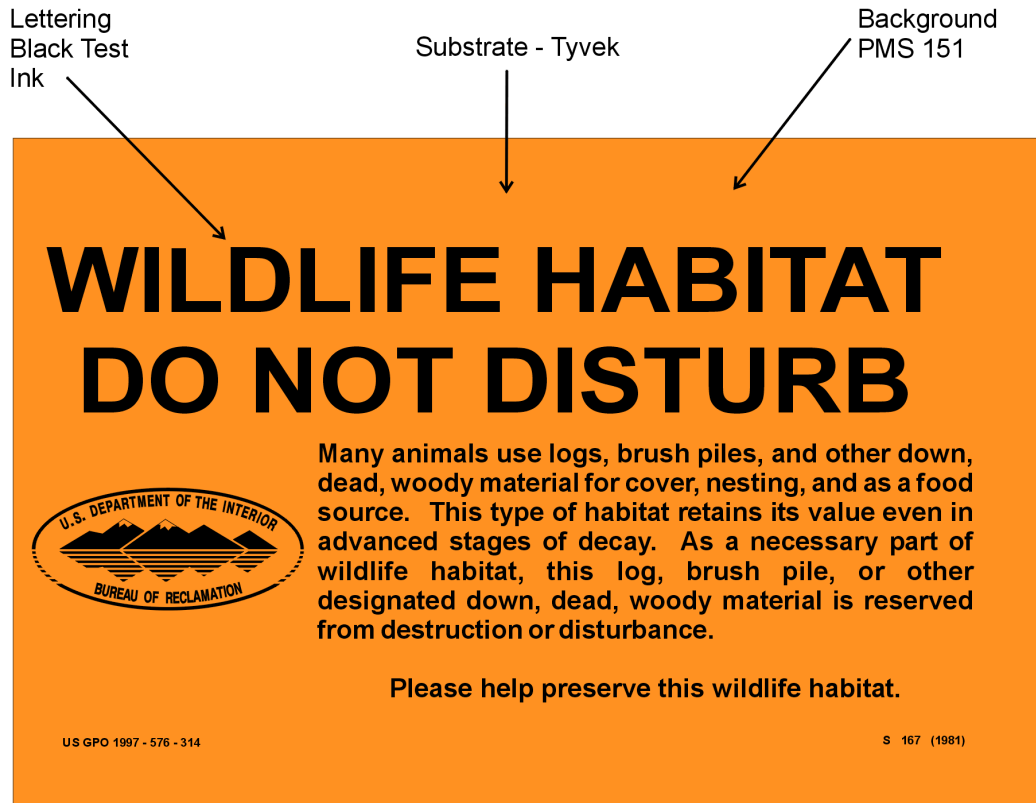
J. Design Type G: Regulatory/Warning/Security signs

Examples of this type of sign are shown on the following pages. The size, color, construction material, and message of the sign will vary, depending on whether it is a vehicular or pedestrian sign and what message is being conveyed to the public. Vehicular signs should always follow MUTCD standards. For pedestrian signs, the color, size, construction material, and message will vary, depending on the existing situation in the area where public regulation or control is needed (i.e., wildlife area, recreation area, security zone around dams and canals).



Design Type G₁ - Regulatory/Warning/Security Sign

Design Type G₂ - Regulatory/Warning/Security Sign



NOTE: Alternative substrate can be plastic with a background color of Orange Polydura with black text ink lettering.

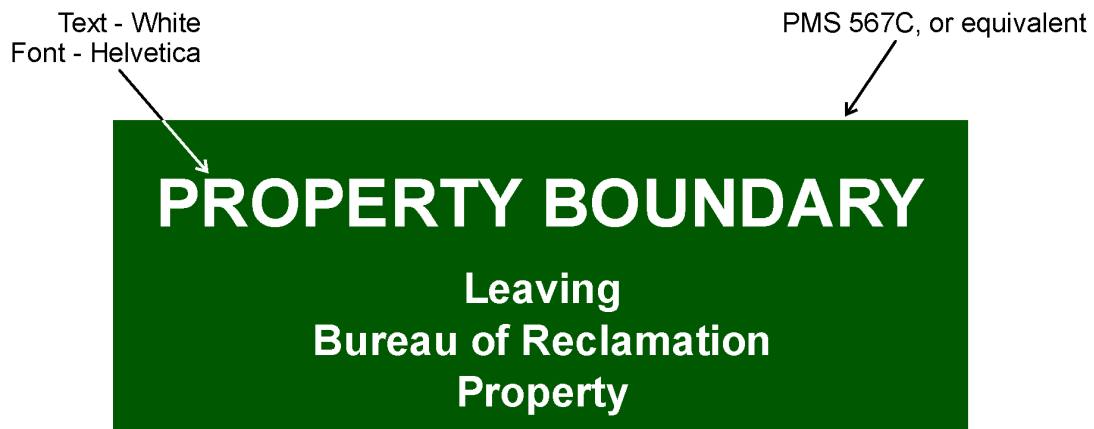


Design Type G₃ - Regulatory/Warning/Security Sign

Sign Guidelines

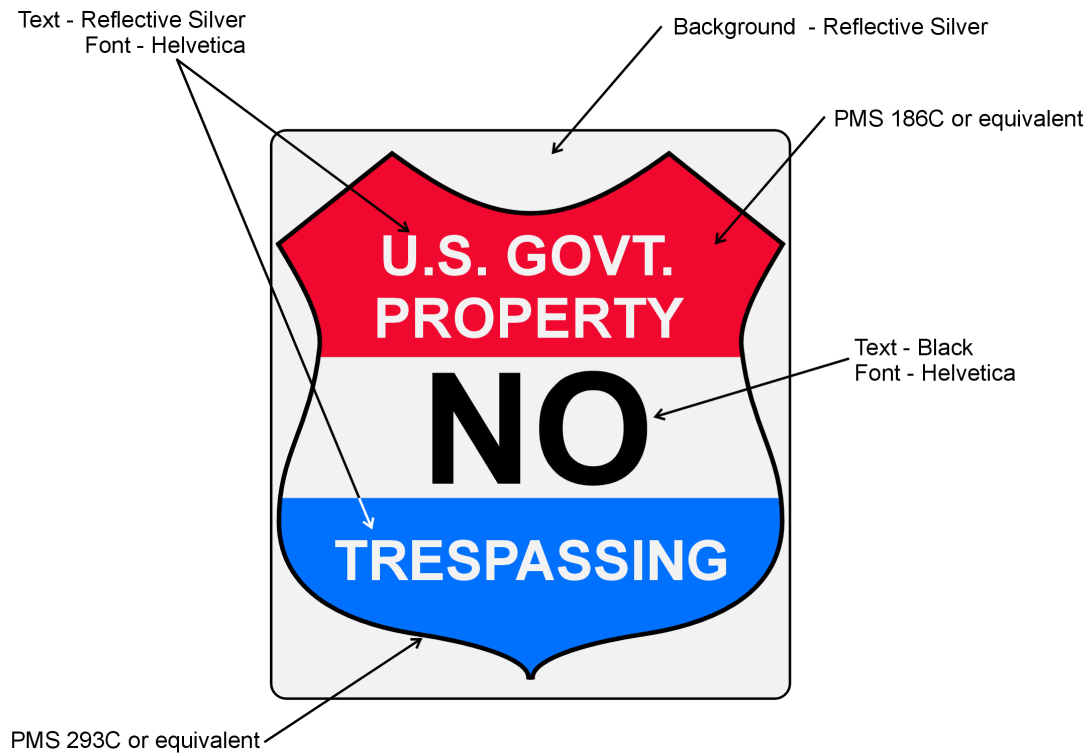


Design Type G₄ - Regulatory/Warning/Security Sign

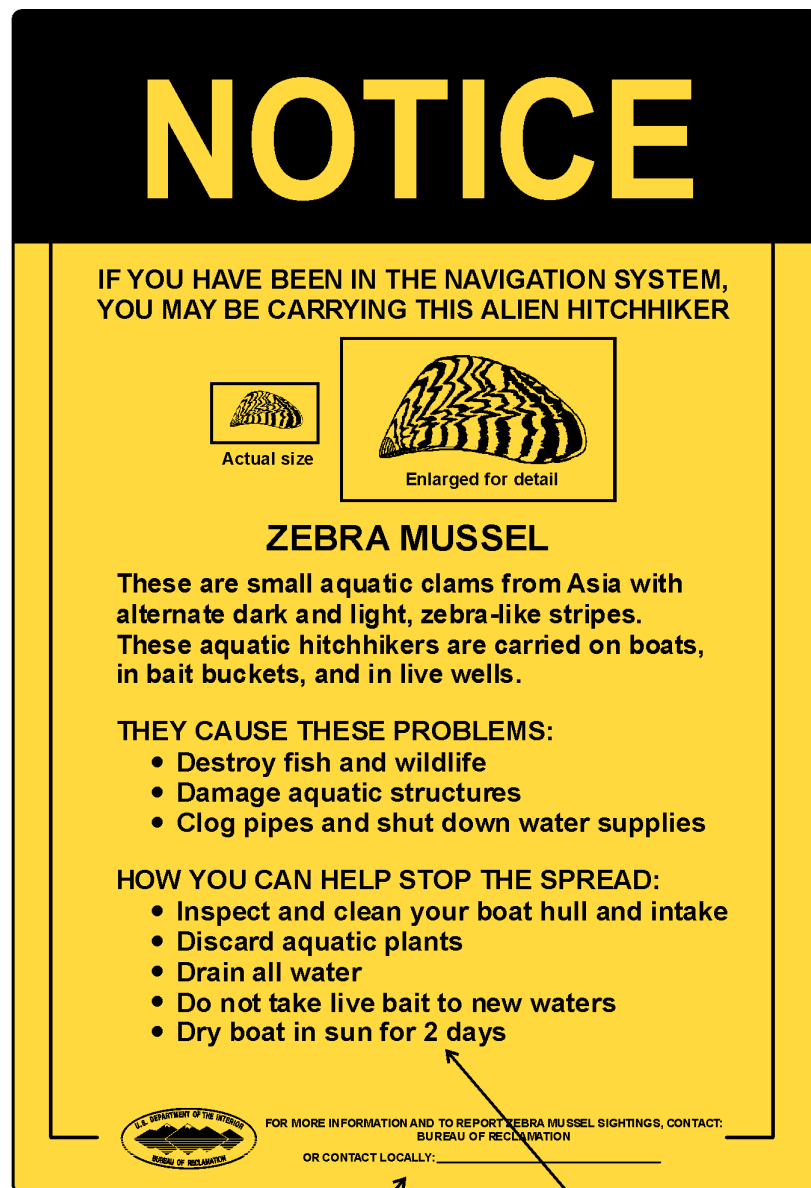


Design Type G₅ - Regulatory/Warning/Security Sign

NOTE: The above sign messages are typically printed on opposite sides of the same sign and suspended from a hanger such as a strand of fence wire.



Design Type G₆ - Regulatory/Warning/Security Sign



PMS 129C, or equivalent

Text - Black
Font - Helvetica

Design Type G₇ - Regulatory/Warning/Security Sign

Chapter VII

PROCUREMENT

Signs should be procured from the most cost-effective and efficient source, including shipping. Regardless of the source, signs should be manufactured in compliance with these Guidelines.

Final design and approval for all Reclamation signs should be the responsibility of the office sign coordinator or the regional sign coordinator as detailed in chapter I. Once the need for new or replacement signs has been determined and funding secured, the area or field office sign coordinator should initiate the procurement process. Except for standardized signs, appropriate drawings and specifications should accompany each sign requisition to ensure compliance with these Guidelines.

Standardized signs, such as highway, snowmobile, and boating signs, can be procured through normal office procedures. Most standardized signs can be obtained through the General Services Administration or Defense Logistics Agency by contacting your property and supply office personnel. Information such as cost authority number, order number, Federal stock number, quantity, and physical description should accompany each request.

Copies of the General Service Administration Catalog, Defense Logistics Agency Catalog, Uniform Traffic Control Devices Standards, Uniform Waterways Marker System, and the National Snowmobile Association Standards can be obtained from Reclamation's Denver Technical Service Center, upon request. Valuable information pertaining to the above-mentioned catalogs and standards can be obtained by accessing the following website addresses:

General Service Administration: < <http://www.pueblo.gsa.gov/> >

Defense Logistics Agency: < <http://www.dla.mil/earthday/tris.htm> >

Uniform Traffic Control Devices Standards: < <http://mutcd.fhwa.dot.gov/ser-pubs.htm> >

Uniform Waterways Marker System: < <http://www.boatsafe.com/nauticalknowhow/buoychanges.htm> >

National Snowmobile Association Standards: < <http://www.snowmobileacsa.org/page.cfm/14/> >

Chapter VIII

SIGN FUNDING AND INVENTORY

- A. General:** A regular sign review and maintenance program should be adopted for all signs existing within the respective regions. It should be the responsibility of the operating office to perform a sign review as needed, prepare a sign inventory, and accomplish any required maintenance of signs within areas and offices under its jurisdiction.
- B. Funding:** Reviews, inventories, and scheduled maintenance of signs should be funded by the responsible managing entity. All facility signs (i.e., buildings/structures) and reservoir area signs where Reclamation has recreation management responsibilities should be funded by the designated Reclamation office. If a Reclamation-operated powerplant is associated with a dam, funding for signs pertaining to that structure should be borne by the responsible Reclamation power office. If a dam is managed by a water users organization, and there are no Reclamation operated powerplants associated with the dam, it should be the responsibility of the water users organization to fund all sign requirements of that site unless otherwise determined through a negotiated agreement. When reservoir recreation activities are managed by the State or another Federal agency, local agency, or private concessionaire, funding for construction, installation, maintenance, and replacement should be the responsibility of the managing entity pursuant to the management agreement.
- C. Sign Inventory and Review:** Each operating office should prepare a sign inventory and update the inventory, as necessary. Updated inventories should be maintained by the area office sign coordinator. Appendix 6 contains six examples of sign inventory worksheets that could be used by Reclamation offices.

A periodic sign review should be performed by the operating office. The following questions should be addressed when conducting the review:

- 1. Adequacy.**—Are additional signs needed? Are existing signs effective? (If not, remove them.) Are some signs no longer needed? (If so, remove them.)
- 2. Wording.**—Is the message clear, concise, and easily understood? (If not, make the necessary changes.)
- 3. Design.**—Does the sign design conform to these Guidelines? (If not, is a new sign more desirable?)

Sign Guidelines

D. Inventory: The following specific information should be included in the inventory:

1. **Identification Number.**—Each sign should be assigned a unique identification number. It should include city, State, and area office. For example: ID-015-10 described sign #10 of the Boise, Idaho, Snake River Area Office of Idaho's Boise District.
2. **Location.**—By road number or facility name (e.g., Owyhee Reservoir), if so associated, or by quarter-section legal description.
3. **Description.**—By catalog number if a general, standardized sign. If not, a short description, such as “interpretative sign,” not longer than 25 letters.
4. **Substrate.**—Aluminum, IWO plywood, plastic, etc.
5. **Size.**—Dimensions of sign.
6. **Installation Date.**—Date the sign was installed.
7. **Cost.**—Include design labor, fabrication labor, materials, and shipping. (Important if vandals are to be prosecuted.)
8. **Last Maintenance Date.**—The date that the sign was previously maintained.
9. **Cost of Maintenance.**—Include both labor and material costs. If labor is by volunteers, include estimated value of the labor.
10. **Current Condition.**—(See Chapter IX - Sign Maintenance, for condition ratings and criteria for each described condition rating.)
11. **Date Condition Determined.**—The date of the inventory.
12. **Projected Next Maintenance Date.**—The date that the next regular maintenance should occur.

E. Evaluation: Using the inventory, identify needed signs and maintenance requirements. Answer the following questions:

1. Are there missing signs?
2. Are the existing signs in good condition?
3. Are the signs in compliance with standards in these Guidelines?
4. Are there signs or posters which are no longer needed or appropriate?
5. Are there obsolete signs that should be replaced with newer editions of the same sign?

6. Are all signs in their proper locations?
 7. Is there a vandalism or theft problem that should be solved in coordination with local law enforcement agencies/officers/authorities?
- F. Action Plan:** Based on the inventory and evaluation described above, develop an annual action plan for ordering and installing new or replacement signs and for maintaining existing signs. Clearly describe planned action, time by which action is to be completed, individual or work unit responsible for accomplishment, and estimated cost. The plan should be commensurate with available funding and workforce availability.

Consider wide use of volunteers for sign maintenance. Most maintenance tasks are easily accomplished by nontechnical people. Sign maintenance tasks are also good projects to offer to youth, church, and community groups. Ideally, recruitment should be done during the winter months, and work agreements made should begin in spring or early summer.

If a vandalism or theft problem exists, discuss possible solutions with appropriate law enforcement entities. Consider sting operations and stakeouts of signs with designs and/or messages that make them likely theft targets. If arrests are made and individuals are successfully prosecuted, work with public affairs staff to publicize that fact as a deterrence to future theft and vandalism. Include any antitheft or antivandalism activities in the action plan.

- G. Planning Period:** A detailed plan is required for only the current fiscal year. It should be completed by January 31 for the following field season. Planning for out years may be less detailed. Update sign plans annually. At least 25 percent of area office signs should be scheduled for maintenance inspections each year.
- H. Documentation:** Document all inspections, installations, removals, and maintenance work as it is completed.

Chapter IX

SIGN MAINTENANCE

- A. Maintenance:** A sign maintenance schedule should be developed annually by each operating office. A backlog of signing needs should be noted, and an annual work plan should be prepared to detail the funding needs for achieving the goals of Reclamation's sign program. The maintenance schedule should address, but not be limited to, the following points:

1. **Damage.**—Damaged signs shall be repaired or replaced, as required.
2. **Visibility.**—Signs that have become obscured by brush or grass shall have the problem vegetation cleared to restore them to a state of desired visibility.
3. **Legibility and Appearance.**—Signs that have become faded or illegible shall be restrained/restored to their original condition. The appearance of sign parts should also be considered.

“Scotchcal” signs can best be maintained by referring to the 3M Company's “Sign Maintenance Manual for Freeways and Toll Roads” and supplements thereto.

4. **Maintenance Objective.**—Plan, schedule, and perform maintenance to keep signs, posters, and other traffic control devices clean, legible, functional, and properly positioned. Effective sign maintenance will facilitate safe use of Reclamation lands and facilities and foster a favorable image of the agency's professionalism in the visitors' eyes.
5. **Condition Survey.**—Condition surveys should be performed on a periodic basis to determine condition and effectiveness of all traffic control devices, signs, and posters. Reflective devices should be inspected at night as well as during the day. Evaluation items should include legibility, reflectivity, overall condition of both the sign and its supports, placement, visibility, encroachment of vegetation, and continued need of the sign at that location.

Managers should promote a high level of awareness among field personnel to recognize missing, improper, incorrectly placed, damaged, or deteriorated signs. They should be encouraged to report these findings to the sign coordinator or the resource specialist whose program is supported by that sign.

- a. Field inspectors should use locally generated checklists to capture information during the inventory/review. The checklists should also be used as a reference in developing the annual maintenance plan.
- b. As a minimum, the checklist should document the sign location (facility or road number), date and time of inspection, inspection findings, recommended

Sign Guidelines

actions, name of inspector, maintenance accomplished, and name of person performing maintenance.

c. ***Condition Ratings:***

- (1) *Excellent.* Sign is new or in a like-new condition. Needs no attention. All lettering and symbols are legible. No vegetation or other objects obscure the sign.
- (2) *Good.* Sign has experienced some weathering, but its lettering and symbols are legible. The sign is intact, with no holes or broken portions. May need some cleaning to eliminate accumulated dirt and minor touchup painting. No vegetation or other objects obscure the sign.
- (3) *Fair.* Sign has been extensively impacted by weathering, requiring extensive cleaning and painting to restore it to its original condition. Lettering and symbols are legible, but barely so. Reflectivity is about half of the original. Vegetation is beginning to encroach on the sign, further detracting from the legibility of the message. Sign may have some holes or other minor damage which can be readily repaired.
- (4) *Poor.* Sign is so weathered that its message is no longer legible. It has been refurbished at least once. It has severe damage from holes or other vandalism. It can be repaired temporarily, but it should be replaced as soon as possible.
- (5) *Missing/Destroyed/Obsolete.* Either the sign is gone or is so damaged that repairs are impossible, or the sign message is outdated or incorrect. If one or more of these conditions exists, and a sign is still needed, a replacement sign should be ordered immediately.

d. ***Reflectivity:*** A great many signs are reflective to ensure their visibility at night. To test visibility, create a small panel (about 8 inches by 10 inches) using sheeting which has an acceptable level of reflectivity. At night, tape the test panel to the face of the sign. Step back about 30 feet, hold a flashlight about 2 inches from your face, and shine it at the sign.

- (1) If the inspection panel is brighter than the sign, replace the sign within the year.
- (2) If the sign is brighter than the inspection panel, the sign still has several years of life remaining.
- (3) If the sign and the panel have equal brightness, the sign has 1 to 2 years of useful life remaining.

- 6. Maintenance Performance.**—Perform maintenance on a regular and systematic basis to ensure signs and other traffic control devices are clean, undamaged, and functional. Check and replace edge tape on a routine basis. Use only those materials (paints, stains, edge tape, sheeting, hardware, etc.) that comply with the original specifications for the sign or traffic control device being refurbished. Evaluate the maintained product against the standard for materials and workmanship established for the original.
- a. **Clearing:** Clear all trees, brush, and other vegetation that may obscure signs. Also make sure that fences or other objects do not obscure signs. Relocate signs if obstructions cannot be eliminated. If clearing is to be accomplished by application of herbicides or other chemicals, appropriate policy and guidelines on applying chemicals should be followed.
 - b. **Cleaning:** Clean all signs obscured by dust, bituminous materials, road film, mud, etc., to restore legibility and reflectivity. Wash signs by:
 - (1) Flushing sign surface with clean water to remove loose dirt.
 - (2) Scrubbing sign face with soft brush, rag, or sponge, using a mild, nonabrasive detergent or other suitable cleaner. Scrub from the top down. Avoid damaging the surface with unnecessary scrubbing. Keep a steady stream of water flowing on the sign face to wash away dirt.
 - (3) Rinse entire sign face with clean water.
 - c. **Special Cleaning Problems:**
 - (1) *Tar, oil, diesel, bituminous material.* Use a mild solvent such as mineral spirits. Then wash the surface with mild detergent and water and rinse with clean water.
 - (2) *Pollen and Fungus.* Wash the surface with a 3- to 5-percent sodium hypochlorite solution, such as a commercial brand of bleach, followed by detergent and water. Rinse with clean water.
 - (3) *Lipstick and Crayon.* Use a mild solvent such as mineral spirits to remove the material. Follow with detergent and water and a clean water rinse.
 - (4) *Paint.* It may be possible to remove paint sprayed onto a reflective sheeting sign face using a commercial paint remover designed for that purpose. The type of paint, length of exposure, and type of remover may affect the life of the sheeting.
 - (5) *Other Severe Contamination.* Soiling that cannot be removed by previously mentioned methods can be removed by scrubbing with a very fine steel wool or plastic kitchen scour. However, unless great care is taken, this scrubbing may destroy all or part of the sign's reflectivity.

Sign Guidelines

For all of these special cleaning procedures, the sign should be inspected at night to determine if the cleaned area has lost too much of its reflectivity. Replace any signs with insufficient reflectivity.

- d. ***Repair:*** Repair damaged signs following the procedures described below. Minor damage may be repaired in the field without removing the sign from its support. Repair of major damage will normally require that the work be performed in a workshop.
 - (1) *Aluminum Substrate Signs.*
 - (a) **Bent Signs.** Straighten sign, and if the reflective background or legend has been scraped or damaged, proceed as follows:
 - (i) Remove all background sheeting and legend from an area slightly larger than that damaged.
 - (ii) Clean exposed surface with a mild detergent and rinse with clean water.
 - (iii) Apply matching pressure-sensitive reflective background sheeting, extending at least ½ inch beyond the damaged area.
 - (iv) Replace damaged legend with die-cut, pressure-sensitive, prespaced letters, borders, and symbols and firmly squeegee in place.
 - (v) If sign is subjected to snow burial and replacement sheeting extends to the top edge of the signs, place transparent film or tape along top edge.
 - (b) **Holes.** Often, it is not necessary to repair each hole in the sign. When a hole does not damage the message or symbol and does not, of itself, create a sloppy signing image, maintenance may not be needed. Where repairs are needed, follow these steps:
 - (i) Remove all damaged background sheeting and legend.
 - (ii) Straighten the sign using a hammer and flat dolly.
 - (iii) Remove any additional sheeting damaged during straightening.
 - (iv) Clean the entire area with mild detergent and rinse with clean water.
 - (v) Patch the hole or puncture on both sides using aluminum foil tape. Use squeegee to apply firm pressure. Do this on both

sides of the sign. On large holes, start placing the foil at the bottom of the hole, overlapping each strip shingle fashion as you move up.

- (vi) Apply reflective background sheeting, extending it at least ½ inch beyond the foil strips.
 - (vii) Replace damaged legend with die-cut, pressure-sensitive, prespaced letters, borders, and symbols and firmly squeegee in place.
 - (viii) If sign is subjected to snow burial and replacement sheeting extends to the top edge of the signs, place transparent film or tape along top edge.
- (2) *Plywood Substrate Signs.* The following procedures are recommended to repair holes and other punctures and to restore a sign's legibility:
- (a) Remove all loose wood on both sides of the sign and all damaged sheeting.
 - (b) Fill holes with wood filler or auto body filler and sand smooth.
 - (c) Wipe areas with clean cloth.
 - (d) On larger repairs, it may be desirable to cover holes with aluminum foil tape. Use squeegee to apply firm pressure. Start placing the foil at the bottom of the hole, overlapping each strip shingle fashion as you move up.
 - (e) Apply reflective background sheeting, extending it at least ½ inch beyond the foil strips.
 - (f) Replace damaged legend with die-cut, pressure-sensitive, prespaced letters, borders, and symbols and firmly squeegee in place.
 - (g) If sign is subjected to snow burial and replacement sheeting extends to the top edge of the signs, place transparent film or tape along top edge.
 - (h) Using an aerosol can of enamel paint (color to match back of sign board), lightly spray the aluminum tape, covering the holes on the sign back.
- (3) *Routed Wood Signs.*
- (a) **Repairing Sign Board.**

Sign Guidelines

- (i) Scrape off loose paint with a wire brush. Dress all holes and damaged wood with the knife.
- (ii) Fill all cracks, holes, and imperfections with wood or auto body filler.
- (iii) Sand sign edges back and forth. Do not sand surface overlays on MDO substrate signs.
- (iv) Remove all loose paint, dust, and other foreign materials.

(b) Painting.

- (i) Apply prime coat.
- (ii) Apply two coats of paint to sign message. Work paint thoroughly into all corners of letters and numbers. Let paint dry thoroughly between coats.
- (iii) Apply two coats of paint to background area.
- (iv) Touch up letters if background paint contaminates the message.

(c) Staining.

- (i) Hand paint message area, keeping paint off sign face.
- (ii) Apply two coats of stain to background areas.

- (4) *Supports and Hardware.* Repair or replace, as necessary, damaged or deteriorated sign supports and associated mounting hardware.

7. Volunteers.—Sign maintenance is an excellent task to give to volunteers. The maintenance skills described above can be quickly taught to individuals. The work can be laid out easily, and volunteers can often provide their own transportation to the worksites. Sign inventory and maintenance is an excellent project to offer to youth, church, and civic groups. It is particularly effective for special youth projects, such as those required for the Boy Scout's Eagle Rank.

REFERENCES

- Bureau of Land Management. BLM Sign Handbook (Draft) (Supersedes Release Nos. 9-234, 9-227, 9-228, 9-243, 9-229).
- Bureau of Reclamation. *Recreation Sign Handbook*, Mid-Pacific Region, Sacramento, California. October 1997.
- Bureau of Reclamation. *Regional Sign Guide*, Upper Colorado Region. 1981.
- Bureau of Reclamation. *Reclamation Safety and Health Standards*, Safety Office, Reclamation Service Center, Denver, Colorado. 1993, reprinted 1995.
- General Services Administration, U.S. Department of Defense, U.S. Department of Housing and Urban Development, and U.S. Postal Service. *Uniform Federal Accessibility Standards*. April 1988.
- U.S. Department of the Army. *U.S. Army Corps of Engineers Sign Standards Manual*, Washington DC. November 1987.

APPENDICES

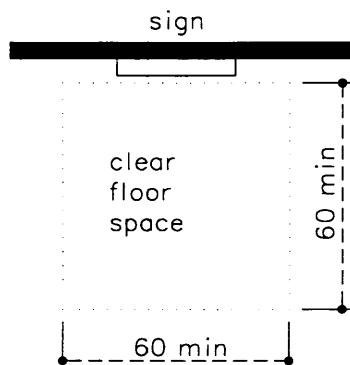
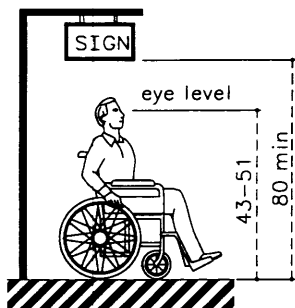
APPENDIX 1 – ACCESSIBILITY DATA MANAGEMENT CHECKLISTS

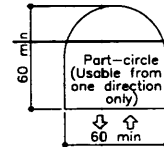
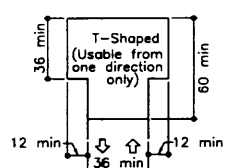
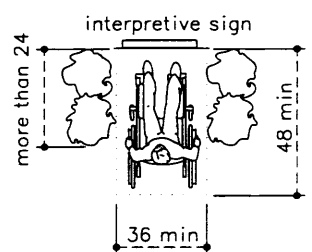
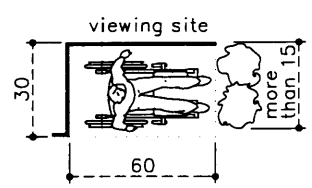
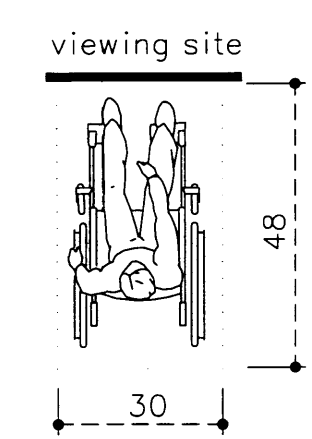
Component: EXHIBIT
 Identifier: exhibit
 Site: index
 Site location: tsc
 Owner: Department of the Interior
 Bureau of Reclamation
 TSC
 Operator: Department of the Interior
 Bureau of Reclamation
 TSC

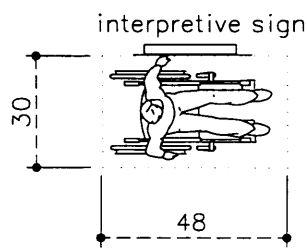
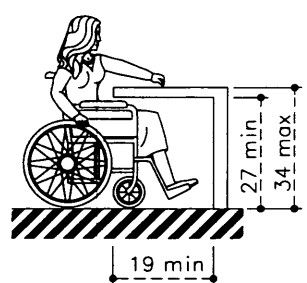
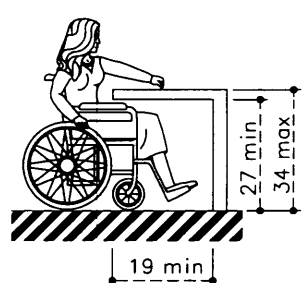
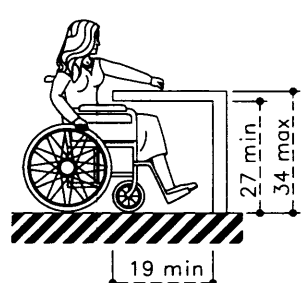
Evaluation Date: _____
 Installation Date: 02-apr-1999

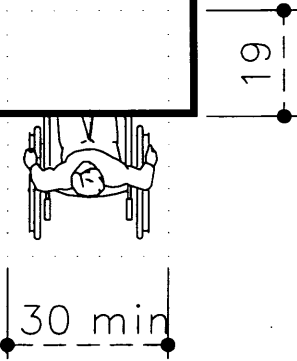
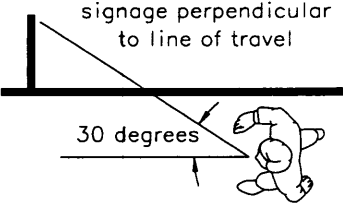
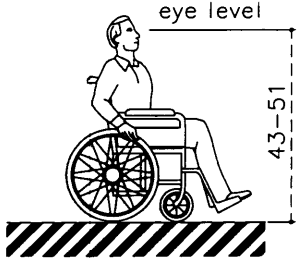
One or more signs, displays, or objects presented as a unit to convey information or provide entertainment.

TEXT INFORMATION	ACTUAL	N/A	QF
1. This exhibit is on, adjacent to, or fully visible from an accessible route. ADAAG 4.3.2 UFAS 4.3.2 Comments:	_____ y/n	_____	_____
2. If this exhibit is one of two or more exhibits, then at least one accessible route connects all the exhibits. ADAAG 4.3 UFAS 4.3 Comments:	_____ y/n	_____	_____
3. If this exhibit is suspended over a walkway, then the clear headroom is 80 in. minimum high. ADAAG 4.4.2 UFAS 4.4.2 Comments:	_____ in	_____	_____
4. At the place where the public usually views the exhibit a clear maneuvering floor space 60 by 60 in. minimum is provided. This clear floor space may overlap the clear floor space of other features. If "Yes", then mark "N/A" to the next five items. ADAAG 4.2.3 UFAS 4.2.3 Comments:	_____ y/n	_____	_____

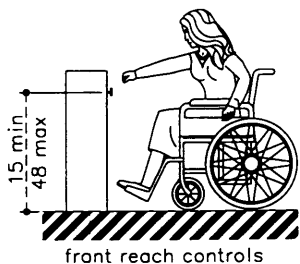


	TEXT INFORMATION	ACTUAL	N/A	QF
  <p>Turning Space</p>	<p>5. If a clear maneuvering space is NOT provided, then a clear 60 by 60 in. Part-circle or T-shaped turning space is provided for viewing the exhibit. If "Yes" then mark "N/A" to the next four items.</p> <p>ADAAG 4.2.3 UFAS 4.2.3</p> <p>Comments:</p>	<p>y/n</p>		
	<p>6. If this exhibit is in a NARROW alcove that has sides MORE than 24 in. deep (OR has obstructions that are more than 24 in. deep which create the effect of an alcove) thus limiting wheelchair users to a forward approach, then the clear floor space provided in front of the exhibit is 36 in. minimum wide.</p> <p>ADAAG 4.2.4.2 UFAS 4.2.4.2</p> <p>Comments:</p>	<p>in</p>		
	<p>7. If this exhibit is in a WIDER alcove that has sides MORE than 15 in. deep (OR has obstructions that are more than 15 in. deep which create the effect of an alcove), then this exhibit is usable by a side approach, and the clear floor space provided in front of the exhibit is 60 in. minimum wide.</p> <p>ADAAG 4.2.4.2 UFAS 4.2.4.2</p> <p>Comments:</p>	<p>in</p>		
	<p>8. If this exhibit is NOT in an alcove AND a clear maneuvering or turning space in front of the exhibit is NOT provided, then a clear floor space 30 in. minimum in one dimension (width or depth) IS provided.</p> <p>ADAAG 4.2.4 UFAS 4.2.4</p> <p>Comments:</p>	<p>in</p>		

	TEXT INFORMATION	ACTUAL	N/A	QF
 <p>interpretive sign</p> <p>side approach</p>	<p>9. If this exhibit is NOT in an alcove AND a clear maneuvering or turning space in front of the exhibit is NOT provided, then the clear floor space is 48 in. minimum in the opposite dimension. ADAAG 4.2.4 UFAS 4.2.4 Comments:</p>	<p>_____ in</p>		
	<p>10. If this exhibit is placed on a horizontal surface, such as a table or counter, AND the exhibit allows personal interaction (for example, picking up brochures, or activating a mechanism), then the surface of the table or counter is 34 in. maximum high. If "N/A" (the exhibit is NOT interactive AND placed on a table or counter) then mark "N/A" to the next three items. ADAAG 4.32.3 UFAS 4.32.3 Comments:</p>	<p>_____ in</p>		
	<p>11. A clear knee space is provided beneath this table-top display that is 27 in. minimum high. ADAAG 4.32.4 UFAS 4.32.4 Comments:</p>	<p>_____ in</p>		
	<p>12. If the clear floor space is ONLY 48 in. deep, then 19 in. maximum is under the table. ADAAG 4.32.3 UFAS 4.32.3 Comments:</p>	<p>_____ in</p>		

	TEXT INFORMATION	ACTUAL	N/A	QF
	<p>13. The clear knee space at this table-top display is 30 in. minimum wide. ADAAG 4.32.3 UFAS 4.32.3 Comments:</p>	<p>_____ in</p>		
	<p>14. If this exhibit is positioned perpendicular to the line of travel, then the exhibit is placed within 30 degrees of centerline of the pedestrian. ADAAG 4.30.1 UFAS 4.30.1 Comments:</p>	<p>_____ y/n</p>		
	<p>15. This exhibit can be seen from viewing sightlines of 43 in. to 51 in. high from the floor. ADAAG 4.2.4 UFAS 4.2.4 Comments:</p>	<p>_____ y/n</p>		
	<p>16. If this exhibit has a display item positioned horizontally (such as an open book, map, or historic document) OR the exhibit has a three-dimensional model, then the item or the base of the model is 44 in. maximum high from the floor. ADAAG 4.1.7.3 UFAS 4.1.7.2 Comments:</p>	<p>_____ in</p>		
	<p>17. ADAAG only. The surface finish of this exhibit is eggshell, matte, or equivalent (1-19 degree gloss on a 60-degree glossimeter). ADA Title II Definitions 28 CFR part 35.104 ADAAG 4.30.5 Comments:</p>	<p>_____ y/n</p>		

TEXT INFORMATION	ACTUAL	N/A	QF
<p>18. ADAAG only. The surface illumination of this exhibit is between 100-300 lux range (10-30 ft-candles). ADA Title II Definitions 28 CFR part 35.104 ADAAG 4.30.8 Comments:</p>	_____ y/n		
<p>19. ADAAG only. The lighting on the surface of this exhibit is uniform. ADA Title II Definitions 28 CFR part 35.104 ADAAG 4.30.8 Comments:</p>	_____ y/n		
<p>20. ADAAG only. The surface lighting of this exhibit is greater than the ambient light. ADA Title II Definitions 28 CFR part 35.104 ADAAG 4.30.8 Comments:</p>	_____ y/n		
<p>21. ADAAG only. This exhibit is placed so that there is no visible bright light source behind or in front to create glare. ADA Title II Definitions 28 CFR part 35.104 ADAAG 4.30.8 Comments:</p>	_____ y/n		
<p>22. If this exhibit is to be activated by the viewer OR is tactile, then the operable or touchable parts are between 15 - 48 in. high. ADAAG 4.2.5 UFAS 4.2.5 Comments:</p>	_____ y/n		
<p>23. If this exhibit has controls or operating mechanisms, then they are operable with one hand. If "N/A" (this exhibit does NOT have controls or operating mechanisms), then mark "N/A" to the next two (2) items. ADAAG 4.27.4 UFAS 4.27.4 Comments:</p>	_____ y/n		



TEXT INFORMATION	ACTUAL	N/A	QF
<p>24. The controls and operating mechanisms are usable without tight grasping, pinching, or twisting of the wrist. ADAAG 4.27.4 UFAS 4.27.4 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>25. The controls and operating mechanisms are operable with 5 lbs of force (lbf) or less. ADAAG 4.27.4 UFAS 4.27.4 Comments:</p>	<p>_____ lb</p>	<p>_____</p>	<p>_____</p>
<p>26. This exhibit is made accessible to, and usable by, persons with MOBILITY impairments. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>27. If this exhibit is NOT accessible to, and usable by, a person with a mobility impairment, then an alternative means IS provided to accomplish access (physically carrying a person is PROHIBITED). Describe the method(s) provided in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 CFR Nat. Historic Preservation Act 36, 800.1 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>28. This exhibit is made accessible to, and usable by, persons with VISUAL IMPAIRMENTS. Specify the method(s) used in the following measurements. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>29. If this exhibit is part of a self-guided tour, then the route connecting this exhibit to the next, or related, exhibit(s) is identified by contrasting colors and patterns on the floor, walls, etc. (for example: a solid yellow line; a dashed blue line; or a red dotted line). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>

TEXT INFORMATION		ACTUAL	N/A	QF
30. Photographs of this exhibit are provided for close-up or slower-paced examination by patrons. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:		_____ y/n	_____	_____
31. If this exhibit contains text, then the text is presented in large print (the size will vary depending on how closely the patron is allowed to approach the text). If "N/A" (NO text is provided for this exhibit), then mark "N/A" to the next 3 items. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:		_____ y/n	_____	_____
<div data-bbox="117 808 411 1096" data-label="Image"> <p>flourished</p> </div> 32. If this exhibit contains text, then the font used is a Simple serif or Sans serif style (flourishes and extreme serifs are often mis-read - the "B" in the graphic could be seen as a "13"). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:		_____ y/n	_____	_____
<div data-bbox="117 1158 411 1365" data-label="Image"> <p>ragged edge sharp edge simple type</p> </div> 33. If this exhibit contains text, then the type style has sharp (not ragged) edges. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:		_____ y/n	_____	_____
34. If this exhibit contains text, then the background behind the text is plain (no pattern, graphics, or texture) to enhance readability. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:		_____ y/n	_____	_____

TEXT INFORMATION	ACTUAL	N/A	QF
<p>35. UFAS only. If this exhibit contains text or graphics, then contrast is provided between the text/graphics and the background (in low light situations, and for persons with some visual impairments, light text on a dark background is easier to see). UFAS 4.30.3 Comments:</p>	<p>_____ y/n</p>		
<p>36. ADAAG only. If this exhibit contains text or graphics, then a minimum of 70% contrast is provided between the text/graphics and the background (black:white is 100% contrast). ADA Title II Definitions 28 CFR part 35.104 Comments:</p>	<p>_____ y/n</p>		
<p>37. Instead of, or in addition to, the above list of methods to make this exhibit accessible to, and usable by, persons with visual impairments, ANOTHER method is provided. Describe the method(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>38. If this exhibit CANNOT be made accessible to, and usable by, persons with visual impairments, then an ALTERNATIVE means is provided. Specify the alternative(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>39. This exhibit is made accessible to, and usable by, persons who are BLIND. Specify the method(s) used in the measurements below. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>40. Descriptions of this exhibit are provided on an audio recording, such as a tape or disk. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		

TEXT INFORMATION	ACTUAL	N/A	QF
<p>41. If this exhibit is dynamic (parts are in motion), then the exhibit is audio-described (pre-recorded or live). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>42. This exhibit includes tactile elements (such as 3-dimensional models, models to demonstrate scale or spatial relationships, working models, or textural examples). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>43. If this exhibit contains text, then it is also provided in Grade 2 Braille. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>44. If this exhibit contains text, then a guide or reader service is provided. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>45. Instead of, or in addition to, the above list of method(s) to make this exhibit accessible to, and usable by, persons who are blind, ANOTHER method is provided. Describe the method(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>46. If this exhibit CANNOT be made accessible to, and usable by, persons who are blind, then an ALTERNATIVE means is provided. Specify the alternative(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		

TEXT INFORMATION	ACTUAL	N/A	QF
<p>47. If this exhibit has aural elements, then it is made accessible to, and usable by, persons with HEARING IMPAIRMENTS. Specify the method(s) used in the measurements below. If "N/A" (NO aural elements are involved with this exhibit), then mark "N/A" to the next 12 items. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>48. Sound amplification is provided at this exhibit with aural elements (for example by a volume control telephone handset, or a volume control device at the unit). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>49. The aural elements of this exhibit are broadcast via a permanently installed or a portable Assistive Listening System. ADA Title II Definitions 28 CFR part 35.104 ADAAG 4.33.7 Rehab Act 504 UFAS 4.33.7 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>50. The aural elements of this exhibit are broadcast to T-coil receivers (such as those used in certain types of hearing aids). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>51. Instead of, or in addition to, the above list of method(s) to make this exhibit accessible to, and usable by, persons who have hearing impairments, ANOTHER method is provided. Describe the method(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>

TEXT INFORMATION	ACTUAL	N/A	QF
<p>52. If this exhibit CANNOT be made accessible to, and usable by, persons with hearing impairments, then an ALTERNATIVE means is provided. Specify the alternative(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>53. If this exhibit has aural elements, then it is made accessible to, and usable by, persons who are DEAF. Specify the method(s) used in the measurements below. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>54. The aural elements of this exhibit are communicated by captioning. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>55. The aural elements of this exhibit are communicated by a graphic device such as a reader board. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>56. The aural elements of this exhibit are communicated by printed media, such as a script or documents. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
<p>57. The aural elements of this exhibit are communicated by qualified interpreter services (ASL and/or Oral). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>

TEXT INFORMATION	ACTUAL	N/A	QF
<p>58. Instead of, or in addition to, the above list of method(s) to make this exhibit accessible to, and usable by, persons who are deaf, ANOTHER method is provided. Describe the method(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>59. If this exhibit CANNOT be made accessible to, and usable by, persons who are deaf, then an ALTERNATIVE means is provided. Specify the alternative(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>60. If this exhibit allows patrons to communicate by voice, then the exhibit is made accessible to, and usable by, persons with NON-FUNCTIONAL SPEECH. Specify the method(s) used in the measurements below. If "N/A" (NO speech is used in this exhibit) then mark "N/A" to the next 5 items. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>61. The portions of this exhibit that require speech allow the patron to communicate by using signalling/communicative devices (such as buttons or levers). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>62. The portions of this exhibit that require speech allow the patron to communicate effectively by using note-pad and pencil. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		

TEXT INFORMATION	ACTUAL	N/A	QF
<p>63. The portions of this exhibit that require speech allow the patron to communicate effectively by using a mechanical or computer device, such as a keyboard and communication software. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>64. Instead of, or in addition to, the above list of the method(s) to make this exhibit accessible to, and usable by, persons who have non-functional speech, ANOTHER method is provided. Describe the method(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>65. If this exhibit cannot be made accessible to, and usable by, persons with non-functional speech, then an ALTERNATIVE means is provided. Specify the alternative(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>66. This exhibit is made accessible to, and usable by, persons with LEARNING IMPAIRMENTS. Specify the method(s) used in the following measurements. Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>67. If the overall message (story or information) is provided in segments, or in several displays, then one or more themes exist to connect related elements for ease of comprehension. ADA Title II Definitions 28 CFR part 35.104 Interior, program non-discrimination 43 CFR Justice, 504 Federal Conducted 28 CFR 39 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		

TEXT INFORMATION	ACTUAL	N/A	QF
<p>68. If appropriate to this situation, color is used to help distinguish between letters or numbers, to separate themes, or to clarify information. ADA Title II Definitions 28 CFR part 35.104 Interior, program non-discrimination 43 CFR Justice, 504 Federal Conducted 28 CFR 39 Comments:</p>	<p>_____ y/n</p>		
<p>69. If text is used, then symbols, pictograms or pictographs are also used to communicate ideas, concepts or information, or help organize the material into themes. If "N/A" (NO text is provided for this exhibit), then mark "N/A" to the next 2 items. ADA Title II Definitions 28 CFR part 35.104 Interior, program non-discrimination 43 CFR Justice, 504 Federal Conducted 28 CFR 39 Comments:</p>	<p>_____ y/n</p>		
<p>70. If text is used, then it is presented in a hierarchical manner (such as: Level 1 = Headline; Level 2 = Summary; and Level 3 = Detailed Text) which provides the reader the information or story at several levels of complexity, comprehension and depth. ADA Title II Definitions 28 CFR part 35.104 Interior, program non-discrimination 43 CFR Justice, 504 Federal Conducted 28 CFR 39 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>71. If text is used, then the text is written in clear, unambiguous, language (preferably with short, simple phrases). ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		
<p>72. Instead of, or in addition to the above list of method(s) to make this exhibit accessible to, and usable by, persons who have learning impairments, ANOTHER method is provided. Describe the method(s) used in this "Comments" section. ADA Title II Definitions 28 CFR part 35.104 Rehab Act 504 Comments:</p>	<p>_____ y/n</p>		

TEXT INFORMATION	ACTUAL	N/A	QF
<p>73. If this exhibit CANNOT be made accessible to, and usable by, persons with learning impairments, then an ALTERNATIVE means is provided. Specify the alternative(s) used in this "Comments" section.</p> <p>ADA Title II Definitions 28 CFR part 35.104</p> <p>Rehab Act 504</p> <p>Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>

DRAFT

Accessible Typeface and Type Size

Point Size Alone Does Not Guarantee Readability

This is 12-point Arial type.

This is 12-point Arial Black type.

This is 12-point Arial Narrow type.

This is 12-point Bookman Old Style type.

This is 12-point Charter type.

This is 12-point Comic Sans type.

This is 12-point Courier New type.

This is 12-point Franklin Gothic type.

This is 12-point Futura Medium type.

This is 12-point Korinna type.

This is 12-point Galliard type.

This is 12-point Garamond type.

This is 12-point Goudy type.

~~This is 12-point Eastman Schwabacher type.~~

This is 12-point Impact type.

This is 12-point Modern type.

This is 12-point NewsGoth type.

This is 12-point Technical type.

This is 12-point Times New Roman type.

This is 12-point Verdana type.

Arial has been found by software manufacturers to be the most readable font by people who have vision loss. Other potentially accessible type faces from the list above include Bookman Old Style, Future Medium, Korinna, NewsGoth, and Verdana. The remaining fonts are either too tightly set, have difficult letter proportions, are too heavy and closed in, or have too much variation between the thick and thin strokes of each character.

16- to 18-point type is generally considered to be large print.

This is 16-point Arial type.

This is 18-point Arial type.

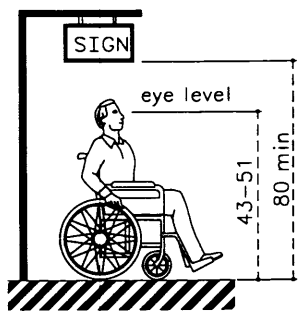
This is 16-point Korinna.

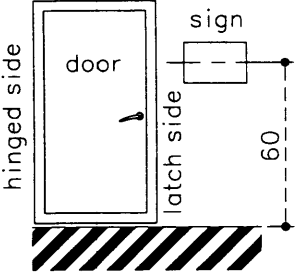
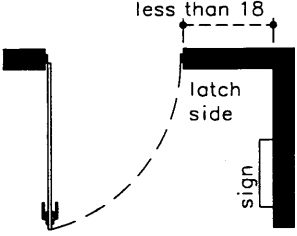
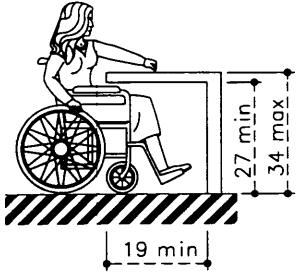
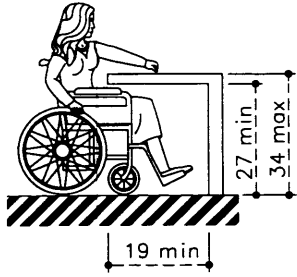
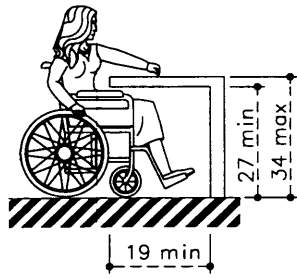
This is 18-point Korinna.

Component: Sign
 Identifier: sign
 Site: index
 Site location: tsc
 Owner: Department of the Interior
 Bureau of Reclamation
 TSC
 Operator: Department of the Interior
 Bureau of Reclamation
 TSC

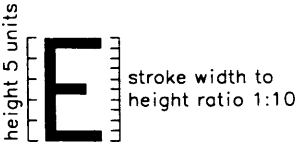
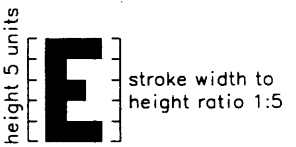
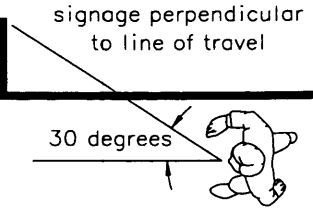
Evaluation Date: _____
 Installation Date: 02-apr-1999

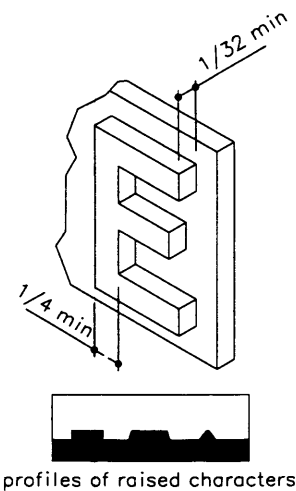
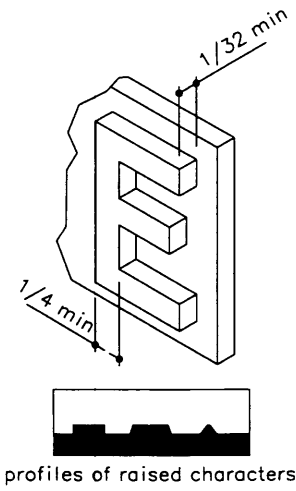
Any displayed verbal, symbolic, tactile or pictorial information.

TEXT INFORMATION	ACTUAL	N/A	QF
<p>1. The sign is on, adjacent to, or fully visible from an access route. ADAAG 4.3.2 UFAS 4.3.2 Comments:</p>	<p>_____ y/n</p>	<p>_____</p>	<p>_____</p>
 <p>2. If the sign or display is suspended over a walkway, then the clear headroom beneath the sign is 80 inches minimum high. ADAAG 4.4.2 UFAS 4.4.2 Comments:</p>	<p>_____ in</p>	<p>_____</p>	<p>_____</p>
<p>3. ADAAG only. If the display is suspended or projected overhead, then the characters and/or numbers are 3 in. minimum high. ADAAG 4.30.3 Comments:</p>	<p>_____ in</p>	<p>_____</p>	<p>_____</p>
<p>4. UFAS only. The sign (or a group of signs) is mounted between 54 and 66 in. high from the finished floor. UFAS 4.30.6 Comments:</p>	<p>_____ in</p>	<p>_____</p>	<p>_____</p>

	TEXT INFORMATION	ACTUAL	N/A	QF
	<p>5. If this sign is permanent identification of a space or room, then it is mounted with the centerline at 60 in. above the finished floor. ADAAG only. ADAAG 4.30.6 Comments:</p>	<p>_____ in</p>		
	<p>6. ADAAG only. The sign is placed so that a person may approach to within 3 in. of the sign without encountering protruding objects, or standing within the swing of a door. ADAAG 4.30.6 Comments:</p>	<p>_____ y/n</p>		
	<p>7. If the sign is placed on a table, then clear knee space under the table is 27 in. minimum high. ADAAG 4.32.3 UFAS 4.32.3 Comments:</p>	<p>_____ in</p>		
	<p>8. If the sign is placed on a table, then clear knee space under the table is 30 in. minimum wide. ADAAG 4.32.3 UFAS 4.32.3 Comments:</p>	<p>_____ in</p>		
	<p>9. If the sign is placed on a table, then clear knee space under the table is 17 in. minimum deep. ADAAG 4.32.3 UFAS 4.32.3 Comments:</p>	<p>_____ in</p>		

TEXT INFORMATION		ACTUAL	N/A	QF
<p>10. CONTRAST exists between text, characters or symbols and the background (light on dark, or dark on light). A minimum of 70% contrast is preferred (Black:white is 100% contrast.) ADAAG 4.30.5 UFAS 4.30.3 Comments:</p>		_____ y/n	_____	_____
<p>11. The background behind any text is clear (free of graphics or patterns). ADAAG 4.30.5 UFAS 4.30.3 Comments:</p>		_____ y/n	_____	_____
<div data-bbox="104 733 408 944" data-label="Image"> <p>ragged edge sharp edge simple type</p> </div> <p>12. The edges of characters and graphics are sharp, not ragged to provide maximum legibility. ADAAG 4.30.2 UFAS 4.30.2 Comments:</p>		_____ y/n	_____	_____
<div data-bbox="104 1027 403 1315" data-label="Image"> <p>flourished</p> </div> <p>13. The lettering or characters used in the text are in a simple type style (flourished letters are often mis-read; for example, this "B" may be read as "13"). ADAAG 4.30.2 UFAS 4.30.2 Comments:</p>		_____ y/n	_____	_____
<p>14. The characters or letters used have a WIDTH-to-HEIGHT ratio that is between 1:1 and 3:5. If possible use a capital X letter to determine the ratio. ADAAG 4.30.2 UFAS 4.30.2 Comments:</p>		_____ y/n	_____	_____

TEXT INFORMATION		ACTUAL	N/A	QF
 <p>height 5 units stroke width to height ratio 1:10</p>	<p>15. The characters or letters used have a STROKE-width to height ratio that is between 1:5 and 1:10. ADAAG 4.30.2 UFAS 4.30.2 Comments:</p>	_____ y/n		
	 <p>height 5 units stroke width to height ratio 1:5</p>			
 <p>signage perpendicular to line of travel 30 degrees</p>	<p>16. If the sign is perpendicular to a pedestrian's line of travel, then the sign is within 30 degrees of centerline of the pedestrian. ADAAG 4.30.1 UFAS 4.30.1 Comments:</p>	_____ y/n		
	<p>17. UFAS only. The RAISED or INDENTED characters are in Sans Serif (no serifs) type style. ADAAG 4.30.4 Comments:</p>	_____ y/n		
	<p>18. ADAAG only. The RAISED characters are in either "Sans Serif" or "Simple Serif" (no serifs or very simple ones) type styles. ADAAG 4.30.4 Comments:</p>	_____ y/n		
	<p>19. ADAAG only. All RAISED or INDENTED characters are in upper case (capital letters). ADAAG 4.30.4 Comments:</p>	_____ y/n		

TEXT INFORMATION		ACTUAL	N/A	QF
 <p>profiles of raised characters</p>	<p>20. If this sign has RAISED or INDENTED characters, symbols or pictographs, then they measure 0.03125 (1/32) in. minimum in relief. If the characters are NOT raised or indented, then mark N/A to this and the next seven (7) items. ADAAG 4.30.4 UFAS 4.30.4 Comments:</p>	_____ in	_____	_____
	<p>21. The RAISED or INDENTED characters are between 0.625 (5/8) and 2.0 in. tall. ADAAG 4.30.4 UFAS 4.30.4 Comments:</p>	_____ in	_____	_____
 <p>profiles of raised characters</p>	<p>22. UFAS only. INDENTED characters have a STROKE WIDTH that is 0.25 (1/4) in. minimum. UFAS 4.30.4 Comments:</p>	_____ in	_____	_____
	<p>23. ADAAG only. If this sign has RAISED or INDENTED characters, then they are accompanied by Grade 2 Braille (See ADAAG appendix A.4.30.4 for dot specifications). ADAAG 4.30.4 Comments:</p>	_____ y/n	_____	_____

TEXT INFORMATION	ACTUAL	N/A	QF
<p>24. If this sign has RAISED characters AND a RAISED BORDER, then the borders are set far away from the characters to prevent confusion in readability. ADAAG 4.30.4 UFAS 4.30.4 Comments:</p>	_____ y/n	_____	_____
<p>25. If the pictogram is raised, then it has a border dimension 6 in. minimum high. ADAAG only. ADAAG 4.30.4 Comments:</p>	_____ in	_____	_____
<div data-bbox="95 710 419 897" data-label="Image"> </div> <p>26. ADAAG only. If a pictogram is used on this sign, then it is accompanied by an equivalent verbal description placed directly beneath. If NO pictograms are used, then mark N/A to this and the next item. ADAAG 4.30.4 Comments:</p>	_____ y/n	_____	_____
<p>27. ADAAG only. The surface finish is eggshell, matte, or equivalent. (11-19 degree gloss on a 60-degree glossimeter). ADAAG 4.30.5 Comments:</p>	_____ y/n	_____	_____
<p>28. ADAAG only. If surface illumination is provided, then it is 100-300 lux range (10-30 foot-candles). If N/A (NO surface lighting is provided), then mark N/A to the next item also. ADAAG 4.30.8 Comments:</p>	_____ y/n	_____	_____
<p>29. ADAAG only. Lighting on the surface is uniform. ADAAG 4.30.8 Comments:</p>	_____ y/n	_____	_____
<p>30. ADAAG only. The surface lighting is greater than the ambient light. ADAAG 4.30.8 Comments:</p>	_____ y/n	_____	_____

TEXT INFORMATION	ACTUAL	N/A	QF
<p>31. ADAAG only. This sign is positioned so that no visible bright lighting source exists behind or in front of the sign to create glare. Evaluate this from a variety of sightlines. ADAAG 4.30.8 Comments:</p>	<p>_____ y/n</p>		
<p>32. The sign or display can be viewed from the viewing heights of 43 and 51 in. ADAAG 4.2.4 UFAS 4.2.4 Comments:</p>	<p>_____ y/n</p>		
<p>33. When viewed from height of 43-51 in. the sign is free of glare. ADAAG 4.30.8 UFAS 4.2.4 Comments:</p>	<p>_____ y/n</p>		

APPENDIX 2 – INTERPRETIVE SERVICES

INTERPRETIVE SERVICES

A. Provide Visitors Opportunities to Learn Through:

1. Pre-visit informational material received through the mail and at travel fairs, workshops, conventions etc. held away from the area.
2. Personal contacts at information stations and visitor centers, staffed points-of-interest, workshops, guided walks and tours, outdoor programs, demonstrations and environmental investigations.
3. Non-personal contacts through media such as signs, exhibits, audiovisual programs, self-guided walks and tours, and publications.

B. Are Important Because They:

1. Welcome visitors.
2. Provide information about things to see and do—and facilities that support visitors' activities.
3. Uncover an array of stories otherwise hidden in the landscape.
4. Capture visitors' interest and attention.
5. Stimulate visitors' thinking about environmental issues.
- 5 Foster understanding of wise resource conservation and use; including the roles of public agencies, businesses and individuals in promoting resource conservation.
- 7 Encourage visitors to act—based on understanding and conviction—to improve environmental conditions in the places they visit and at home.

C. Create Experiences By: (Tilden, *Interpreting Our Heritage*, 1977)

1. Relating what visitors see/hear/feel to something within their personalities or experiences.
2. Revealing new insights.
3. Using various art forms to convey information.
4. Provoking visitors into new thinking and activity patterns.
5. Providing a “whole picture” of the situation at hand rather than an isolated part.
6. Serving children and adults with programs and facilities to meet their respective needs and interests.

APPENDIX 3 – INTERPRETIVE PROJECT PLANNING GUIDE

INTERPRETIVE PROJECT PLANNING GUIDE

United States Department of the Interior
Bureau of Reclamation

Interpretive Area:

Project:

Area Office:

Date:

Opportunity (Conditions, features, or events meriting interpretation):

A. DATA COLLECTION/ANALYSIS

1. WHY? Objective (What do you want the audience(s) to do with the information received?):

2. WHO? Audience (customer profile):

a. Numbers expected:

(1) First-time customers:

(2) Repeat customers:

b. Age/group makeup (children, young adults, adults, seniors/individually, families, tour groups, etc.):

c. Education levels:

d. Background (urban or rural):

e. Origin (local, in-state, regional, national, foreign):

f. Time available (amount of time customers have to receive message):

3. WHAT? Message (What are the key ideas to communicate?):

a. Information customers are expecting (place first priority on *customer needs*):

b. Information you (Reclamation) want customers to have:

- c. Theme (One sentence describing the dominant idea customers should leave with):

4. WHERE and WHEN? Location and timing:

- a. Best location(s) for presenting message.
- b. Best time(s) for presenting (When are customers most available or receptive?):

5. HOW? Media:

- a. Select "most effective" media for the project. This list may help you. Add other ideas. Number in order of priority.

- _____ Audiovisual presentation
 - _____ Personal
 - _____ Slide Tape
 - _____ Video Tape
 - _____ Movie
- _____ Auto or float tour
 - _____ Guided
 - _____ Self-guided (signs, brochure, or cassette tape)
- _____ Brochure
- _____ Demonstration (resource management, living history)
- _____ Environmental education investigation

- ☐ Exhibit
 - ☐ Outdoor (roadside, trail head, Reclamation entrance, office, etc.)
 - ☐ Indoor (reception area, visitor bureau, etc.)
 - ☐ Traveling (fairs, malls, conventions, etc.)
- ☐ Interpretive sign (points of interest)
- ☐ Staffed information point (office, visitor center, overlook, temporary roadside stop, trail head)
- ☐ Nature trail
 - ☐ Guided
 - ☐ Self-guided (signs, brochure, or cassette tape)
- ☐ Newsletter
- ☐ News Media short or feature
 - ☐ Magazine
 - ☐ Newspaper
 - ☐ Radio
 - ☐ Television
- ☐ Poster
- ☐ Short-range radio transmitter (auto AM or exhibit)
- ☐ Symposium
- ☐ Workshop
- ☐ Other

- b. If several media are selected, how will their use be coordinated to effectively and economically reach the audience(s)?

6. Special needs (access for people with disabilities, secretarial needs in reception areas, fragile state protection, interpretive association sales, etc.):

B. IMPLEMENTATION SCHEDULE

1. Budget

- a. Total cost estimate:

- b. Sources of funds and availability (Resource program budgets, challenge grants, interpretive association, donations, partners? Reclamation's portion included in Annual Program Development?)

2. Target completion data:

3. Information and skills needed to complete project (*include contracting needs*):

4. Planning and developing assignments:

<i>Who</i>	<i>Unit/Organization</i>	<i>Assignment</i>	<i>Target Date</i>
------------	--------------------------	-------------------	--------------------

5. Evaluation (Design, into the project, a means for assessing its effectiveness.):

a. Degree to which objective is achieved:

b. Numbers of customers contacted:

c. Overall customer reaction:

d. Modifications needed to achieve "Standard Service Level" (or discontinue):

6. Approvals:

Name	Title	Date
------	-------	------

Name	Title	Date
------	-------	------

Name	Title	Date
------	-------	------

APPENDIX 4 – TABLE OF LETTER WIDTHS AND SPACING GUIDE

Table of Letter Widths

Letter widths in units		
A 36	a 26	. 7
B 32	b 25	, 8
C 29	c 21	: 7
D 35	d 26	; 8
E 31	e 22	' 8
F 30	f 21	" 17
G 35	g 28	! 7
H 35	h 27	? 7
I 17	i 15	- 14
J 25	j 16	(9
K 36	k 29	& 34
L 30	l 14	% 31
M 44	m 39	\$ 19
N 36	n 27	21
O 33	o 25	1 18
P 30	p 26	2 26
Q 36	q 26	3 26
R 34	r 22	4 26
S 28	s 19	5 26
T 31	t 18	6 25
U 34	u 28	7 24
V 33	v 25	8 26
W 52	w 38	9 25
X 37	x 28	0 27
Y 34	y 25	6 53
Z 29	z 21	42

Letter size factors

To convert letter-width and spacing-units into inches, multiply by the following factors;

Lettersize	Factor
1"	.0474
1 1/2"	.0711
2"	.0948
3"	.1422
4"	.1896
6"	.2844
8"	.3792

Table of Letter Widths

Letter widths in units		
A 36	a 26	. 7
B 32	b 25	, 8
C 29	c 21	: 7
D 35	d 26	; 8
E 31	e 22	' 8
F 30	f 21	" 17
G 35	g 28	! 7
H 35	h 27	? 7
I 17	i 15	- 14
J 25	j 16	(9
K 36	k 29	& 34
L 30	l 14	% 31
M 44	m 39	\$ 19
N 36	n 27	21
O 33	o 25	1 18
P 30	p 26	2 26
Q 36	q 26	3 26
R 34	r 22	4 26
S 28	s 19	5 26
T 31	t 18	6 25
U 34	u 28	7 24
V 33	v 25	8 26
W 52	w 38	9 25
X 37	x 28	0 27
Y 34	y 25	6 53
Z 29	z 21	42

Letter size factors

To convert letter-width and spacing-units into inches, multiply by the following factors;

Lettersize	Factor
1"	.0474
1 1/2"	.0711
2"	.0948
3"	.1422
4"	.1896
6"	.2844
8"	.3792

Spacing Guide

Capital Letters to Capital Letters

AX

First letters																										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	2	3	2	3	3	3	2	3	3	2	3	3	3	3	2	3	2	3	3	2	1	1	1	2	2	4
B	3	6	6	6	6	6	6	6	6	4	6	6	6	6	6	6	6	6	7	5	3	2	2	3	2	6
C	3	6	6	6	6	6	6	6	6	4	6	6	6	6	6	6	6	6	7	7	4	4	4	4	4	6
D	1	5	6	5	5	5	6	5	5	4	5	5	5	5	6	5	6	5	6	6	3	2	2	3	2	5
E	5	8	7	8	8	8	7	8	8	6	8	8	8	8	7	8	7	8	9	7	5	4	4	6	5	8
F	0	5	5	5	5	5	5	5	5	2	5	5	5	5	5	5	5	5	6	5	3	3	3	3	3	4
G	1	5	5	5	5	5	5	5	2	2	5	5	5	5	5	5	5	5	6	4	2	1	1	2	1	4
H	3	6	5	6	6	6	5	6	6	4	6	6	6	6	5	6	5	6	6	5	4	4	4	4	4	6
I	3	6	5	6	6	6	5	6	6	4	6	6	6	6	5	6	5	6	6	5	4	4	4	4	4	6
J	0	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	4
K	2	4	3	4	4	4	3	4	4	3	4	4	4	4	3	4	3	4	3	2	1	1	1	3	3	4
L	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	3	2	1	1	3	3	6
M	3	6	5	6	6	6	5	6	6	4	6	6	6	6	5	6	5	6	6	5	4	4	4	4	4	6
N	1	5	4	5	5	5	4	5	5	2	5	5	5	5	4	5	4	5	5	4	3	3	3	3	3	5
O	2	5	6	5	5	5	6	5	5	3	5	5	5	5	6	5	6	5	6	5	3	2	2	3	2	5
P	0	5	4	5	5	5	4	5	5	3	5	5	5	5	4	5	4	5	6	5	3	2	2	3	2	4
Q	2	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	3	2	0	0	3	0	5
R	2	5	4	5	5	5	4	5	5	4	5	5	5	5	4	5	4	5	6	4	2	2	2	3	1	5
S	2	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	6	6	6	5	4	3	3	4	3	7
T	2	6	5	6	6	6	5	6	6	2	6	6	6	6	5	6	5	6	5	4	4	3	3	4	4	6
U	0	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	2	4	3	2	2	3	2	4
V	3	4	2	4	4	4	2	4	4	-1	4	4	4	4	2	4	2	4	3	4	2	2	2	2	2	4
W	3	4	2	4	4	4	2	4	4	1	4	4	4	4	2	4	2	4	3	4	2	2	2	2	2	4
X	2	4	2	4	4	4	2	4	4	2	4	4	4	4	2	4	2	4	4	2	1	1	1	2	0	4
Y	2	4	2	4	4	4	2	4	4	-1	4	4	4	4	2	4	2	4	4	3	3	2	2	2	2	4
Z	4	7	7	7	7	7	7	7	7	6	7	7	7	7	7	7	7	7	8	7	5	4	4	6	5	7

Second
letters

Spacing Guide

Capital Letters to lower case letters

Ax

First letters	Second letters																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	3	1	1	1	1	2	2	2	2	-2	2	2	2	2	1	1	1	2	3	0	0	-1	-1	2	-1	3
B	4				3			3	4	0		3			3			3			3				1	
C	4				3			4	4	0		4			3			3			3				2	
D	4				4			3	4	0		3			4			3			4				2	
E	5	5	5	5	5	6	5	5	5	2	4	5	5	5	5	4	5	5	6	4	5	3	3	4	2	
F	1				0			2	2	-2		2			0			2		2	2				1	
G	3				3			2	3	-1		2			3			3			3				1	
H	3	3	2	2	2	4	3	4	3	-1	3	4	3	3	2	2	2	3	4	2	2	0	0	3	0	4
I	3	3	2	2	2	4	3	4	3	-1	3	4	3	3	2	2	2	3	4	2	2	0	0	3	0	4
J	0				0			3	1			3			0						0				-1	
K	2				1			2	2	-2		2	2	2	1			2			0				-1	
L	4	3			3			3	3	0		3			3						3				1	
M	3		2	2	2			4	3			4			2		2	3			2				0	
N	2				1			3	2			3			1						1				0	
O	3	3	4	3	3	3	3	2	3	0	2	2	3	3	3	3	3	3	4	2	3	3	3	3	2	3
P	2			1	0			2	2			2			0			2	2		2				1	
Q	4				3			2	3			2			3						2				0	
R	4			3	3			2	3	-1		2			3						3				0	
S	4		4		4			3	4	0	3	3	3	3	4	3	3	3		3	3	1			2	
T	3				1			3	3	-1		3			1			3	2		3	2			1	3
U	1	3	1	1	0	2	0	2	2	-2	2	2	1	1	0	1	0	1	1	1	0	-1	-1	0	-1	1
V	-2				-2			2	0	-1		2	-1	-1	-2			-1			-1				-3	
W	-2				-2			2	0	-1		2	-1	-1	-2			-1			-1				-3	
X	2				1			2	2			2			1						0				-1	
Y	-1	2	-2	-2	-2	0	-3	2	0	-3	2	2	-2	-2	-2	-2	-2	-2	-2	0	-2	-2	-2	-2	-3	-1
Z	5				4			5	5	0		5			4			4			4	2	2		2	

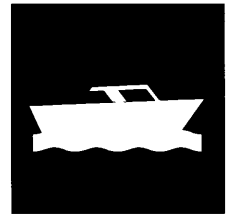
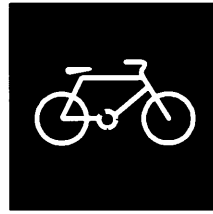
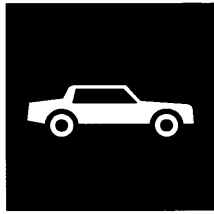
Spacing Guide

Lower case letters to lower case letters																											ax	
First letters		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	Second letters
	a	3	1	3	3	3	3	3	2	3	-1	2	2	3	3	3	1	3	3	4	1	1	-1	0	2	0	3	
	b	4	2	4	4	4	3	5	2	3	0	2	2	3	3	4	2	4	3	5	2	2	2	2	2	2	4	
	c	4	3	4	4	4	4	4	3	4	0	3	3	4	4	4	3	4	4	5	3	3	2	2	2	2	5	
	d	3	1	2	2	2	3	2	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	e	4	2	4	4	4	3	5	2	3	0	2	2	3	3	4	2	4	3	5	2	2	2	2	2	2	4	
	f	0	2	0	0	0	1	0	2	2	-2	2	2	1	1	0	1	0	1	1	0	1	0	0	0	0	2	
	g	2	0	2	2	2	3	1	0	2	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	h	3	1	2	2	2	3	2	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	i	3	1	2	2	2	3	2	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	j	6	4	4	4	4	5	5	4	5	3	4	4	4	4	4	4	4	4	5	4	4	3	3	3	4	5	
	k	2	1	2	2	2	3	2	3	3	0	2	2	3	3	2	1	2	3	3	1	1	1	1	2	1	3	
	l	3	1	2	2	2	3	2	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	m	3	1	2	2	2	3	3	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	n	3	1	2	2	2	3	3	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	o	4	2	4	4	4	3	5	2	3	0	2	2	3	3	4	2	4	3	5	2	2	2	2	2	2	4	
	p	4	2	4	4	4	3	5	2	3	0	2	2	3	3	4	2	4	3	5	2	2	2	2	2	2	4	
	q	3	2	3	3	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3	2	2	2	2	2	3	3	
	r	3	1	2	2	2	3	1	2	3	0	2	2	3	3	2	2	2	2	3	2	2	2	2	2	2	3	
	s	5	3	4	4	4	4	4	3	5	0	3	3	4	4	4	3	4	4	5	3	3	3	3	3	3	6	
	t	5	3	3	3	3	4	3	3	4	1	3	3	3	3	3	3	3	3	5	1	2	2	2	3	2	4	
	u	3	1	2	2	2	3	2	2	3	0	2	2	3	3	2	1	2	3	3	1	1	0	0	2	1	3	
	v	2	2	2	2	2	3	1	1	3	0	1	1	3	3	2	2	2	3	3	2	2	2	2	2	2	3	
	w	3	2	2	2	2	3	1	1	3	0	1	1	3	3	2	2	2	3	3	2	2	2	2	2	2	3	
	x	3	3	2	2	2	3	3	3	3	0	3	3	3	3	2	2	2	3	4	2	2	2	2	2	2	3	
	y	2	1	1	1	1	3	1	1	3	-1	1	1	2	2	1	2	1	2	2	2	2	2	2	2	2	2	
	z	5	4	4	4	4	5	4	4	5	1	4	4	5	5	4	3	4	5	6	3	3	3	3	3	3	5	

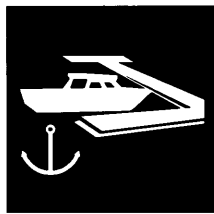
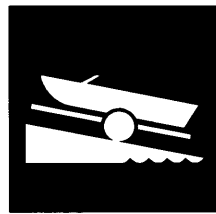
APPENDIX 5 – INTERNATIONAL SYMBOLS

INTERNATIONAL SYMBOLS

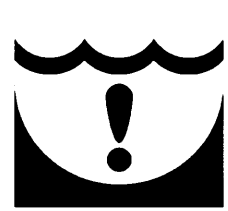
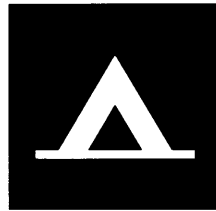
ATV Trails
Automobiles
Bicycle Trails
Boating



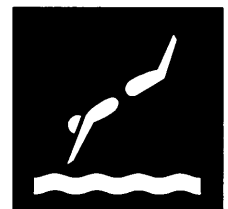
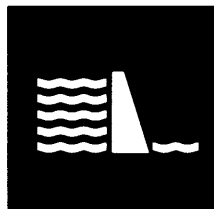
Boat Access
Boat Launch
Camper Trailer
Campfire



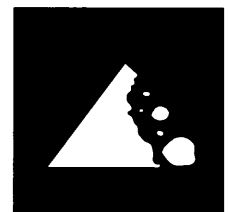
Camping
Canoeing
Climbing
Caution Deep
Water



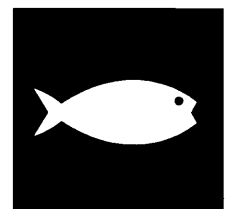
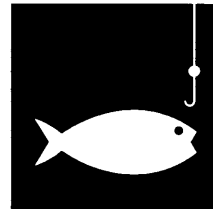
Caution Rocks
Dam
Deer Viewing
Diving



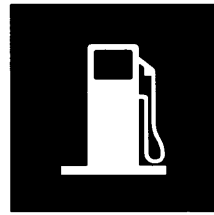
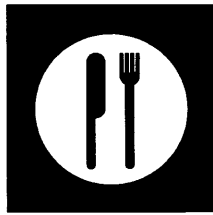
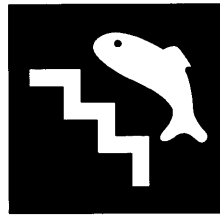
Drinking Water
Drown Campfires
Environmental
Studies Area
Falling Rocks



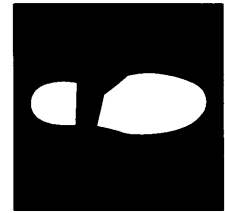
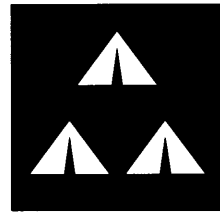
Firewood Cutting
Area
First Aid
Fishing
Fish Hatchery



Fish Ladder
Food
Fuel/Gas
Grocery



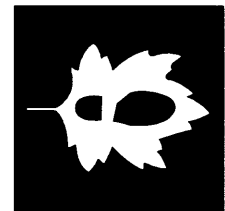
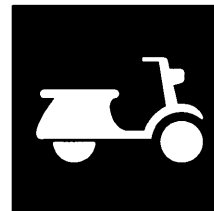
Group Camping
Handicap Access
Hiking
Hiking Trail



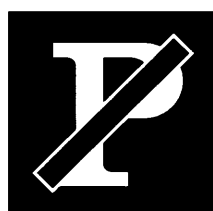
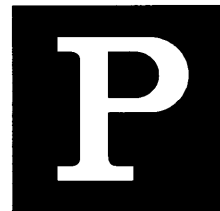
Horse Trail
Hunting
Information
Jeep Trails



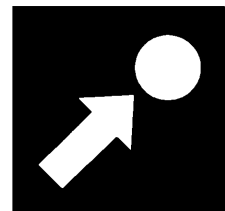
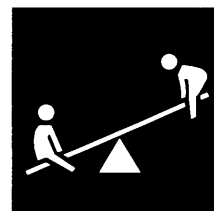
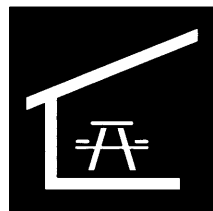
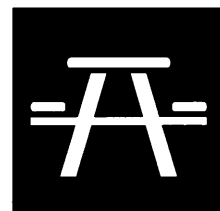
Lodging
Marina
Motor Scooter
Nature Trail



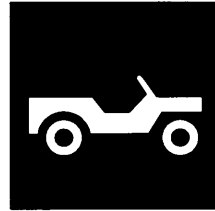
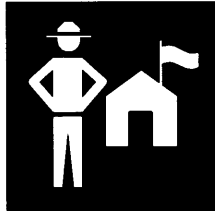
Parking
No Parking
Pedestrian Crossing
Pets on Leash



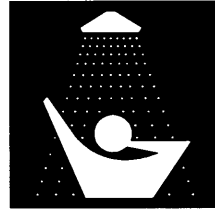
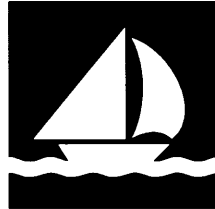
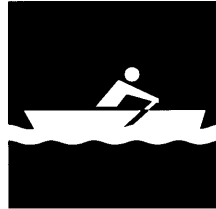
Picnic Area
Picnic Shelter
Playground
Point of Interest



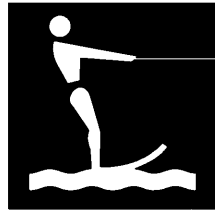
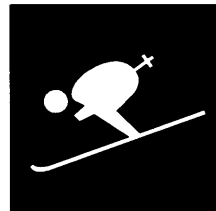
Rafting
Ranger Station
Recreational Vehicle
Trail
Rock Climbing



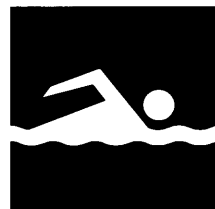
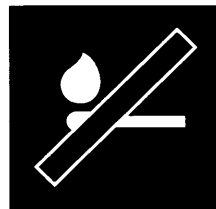
Rowing
Sailing
Shower
Skiing, Cross
Country



Skiing, Downhill
Skiing, Water
Sleeping Shelter
Smoking



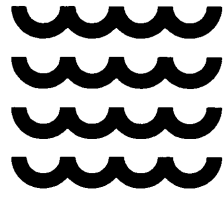
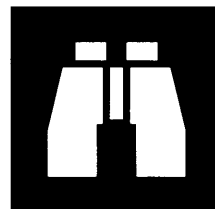
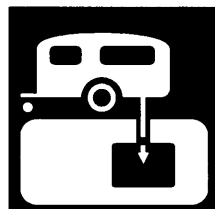
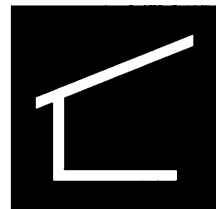
No Smoking
Snowmobling
Swimming
Telephone



Toilets
Toilets, Men
Toilets, Women
Trail Bike Trail



Trail Shelter
Trailer Sanitary
Station
View Point
Water Sports Area



BLM International MARKERS

page 1

	 campground	 parking	 mountain bike trail	 handicapped	 wildlife viewing area
 information	 campfires	 picnic area	 motor boating	 marina	 hiking
 all terrain vehicle trail	 fishing	 boat ramp	 hunting	 interpretive trail	 first aid
 rock collecting		 restrooms	 scenic area	 climbing	 horse trail
 wild horse viewing area	 dirt bike trail	 four wheel drive trail	 bird viewing area	 bird of prey viewing area	 spelunking
 bicycle trail	 white water rafting	 kayaking	 canoeing	 scenic geology	 visitor center
 BLM back country byway	 drinking water	 cross country skiing	 point of interest	 picnic shelter	 downhill skiing
 food service	 interpretive auto road	 snowmobiling	 trailer camping	 interpretive sign	 playground
 petroglyph	 archeological site	 emergency shelter	 trailer sanitary station	 gasoline station	 hang gliding area

BLM International Markers

page 2



telep hone



cabin
rental



land
sailing



desert
tortoise



fee area



fossil
site



historic
site



ranger
station



general
store



lodging



environmental
study area



group
campground



trash
collection



group day
use area



long term
visitot area



swim ming



em ergency
radio

APPENDIX 6 – EXAMPLES OF SIGN INVENTORY WORKSHEETS

INTERPRETIVE SITE INVENTORY WORKSHEET			
Interpretive Area:		Area District	
Site	Map Index No.	Name	Location
Story Nos. (Ref. story inventory)	Story Titles	Significance to Stories. Special Needs. (What happened here? What can be seen? Site protection, customer access and safety, other needs?)	
Example			

INTERPRETIVE SITE INVENTORY WORKSHEET		
Interpretive Area:		Area District
Story	Number	Title
Summary: (50-75 words)		
References (title, author, publisher, page Nos.)		
Site Nos. and Locations (Ref. site inventory)		Media ¹ Ideas

¹ Indicate one: P (primary) S (secondary)

Sign Inventory Worksheet

Project					
Managing Entity					
Point of Contact: Name Address Phone No.					
Sign Location (see attached map)					
Sign Category		Identification			Regulatory
		Informational			Safety
		Directional			Miscellaneous
Sign Panel Material		Wood			Masonry
		Metal			Other
Panel Size		Legend Size		Sign Legend: Line-for Line	
HAGL¹		Viewing Distance²			
Post Size		Photo No.			
Accessibility Requirements³					
Sign Condition					
Remarks:					
Cost Estimate to replace/repair (if necessary):				Priority: (circle) <i>High Medium Low</i>	
Prepared by:		Date:		Page of Pages	

¹ Height above ground level.² Reference U.S. Army Corps of Engineers Sign Manual.³ Does it meet ADAAG 4.30 requirements.

Sign Inventory Worksheet

Project	
Project Location	
Purpose	Recreational Informational
Specify Location	
Building Location	Inside Outside
Sign Size	
Sign Wording and/or logo	
Material Used	Wood Metal Stone Masonry Misc.
Sign Condition	Good Fair Poor
Does it meet Accessibility Guidelines?	Yes No
Agency Responsible for Maintenance of Sign	
How Displayed	Post Side of Building On fence Misc.
Remarks	

Sign Inventory Worksheet**Location** _____**Inspection Date** _____

Sign No. Description	Material/Color	Size	Agent	Condition
Example				

Sign Inventory Worksheet for _____

Sign No.	
Sign Description	
Agent	
Color	
Material	
Condition	
Inspection Date	
Project Repair Date	
Repair Date	
Size	
Photo Number	